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THIRTEENTH ANNUAL REPORT

OF THE

DEPARTMENT OF

PUBLIC WORKS

TO THE

CITY COUNCIL OF THE CITY OF CHICAGO,

FOR THE

Fiscal Year Ending December 31,

1888.

CHICAGO:
CAMERON, AMBERG & CO., PRINTERS.
1889.

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W. B. Ogden

FIRST MAYOR OF CHICAGO.

Elected May 2nd, 1837.

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Department of Public Works,

CITY OF CHICAGO.

COMMISSIONER.

GEO. B. SWIFT.

SECRETARY.

D. S. MEAD.

Heads of Bureaus.

ENGINEERING.	
City Engineer,	W. R. NORTHWAY
Chief Engineer Water Works System,	F. W. GERECKE
SEWERS.	
Superintendent,	O. H. CHENEY
STREETS.	
Superintendent,	GEO. W. DEAL
SPECIAL ASSESSMENTS.	
Superintendent,	H. J. JONES
WATER RATE COLLECTIONS.	
Superintendent,	THOS. N. BOND
MAPS.	
Superintendent,	F. V. BUSCHICK
ACCOUNTS.	
Department Book-keeper,	F. C. MEYER
Pay Master,	JOHN FREEMAN

Chief Clerk Water Rates,	CHAS. CATLIN
Water Rate Assessor,	T. PATTISON
Water Permit Clerk,	H. G. NAPER
Cashier Water Rates,	R. N. PEARSON
Registrar Water Rates,	W. S. MAHER
Meter Rate Clerk,	W. H. REED
In Charge of Private Drains,	B. F. DAVENPORT
Engineer in Charge North Pumping Works,	HENRY WELCH
Engineer in Charge West Pumping Works,	ROBERT COMMONS
Engineer South Branch River Pumping Works,	JOHN DENNIS
Engineer North Branch River Pumping Works,	W. J. TURNBULL
Superintendent Water Meters,	H. A. HAWKINS
Superintendent Bridge Repairs,	G. R. BRAMHALL
Assistant Superintendent Bridge Repairs,	B. McDEVITT
Lake Crib Keeper,	C. KcKEE

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DEPARTMENT OF PUBLIC WORKS.

ARTICLE I. The Commissioner of Public Works.
II. The Commissioner's Secretary.
III. The City Engineer.
IV. The Superintendent of Streets.
V. The Superintendent of Water.
VI. The Superintendent of Sewerage.
VII. The Superintendent of Special Assessments.
VIII. The Superintendent of Maps.

ARTICLE I.

THE COMMISSIONER OF PUBLIC WORKS.

551. There is hereby established an executive department of the municipal government of the city of Chicago, which shall be known as the department of public works, and shall embrace the commissioner of public works, a secretary to said commissioner, the city engineer, the superintendent of streets, the superintendent of water, the superintendent of sewerage, the superintendent of special assessments, the superintendent of maps, and such other assistants and employes as the city council may, by ordinance, prescribe and establish.

552. There is hereby created the office of commissioner of public works, who shall be the head of said department of public works, and shall hold his office for the term of two years, and until his successor shall be appointed and qualified. He shall have the management and control of all matters and things pertaining thereto; and the appointment and removal, with the consent of the mayor, of the subordinate officers named in the last preceding section; and said subordinate officers may, with the consent of the commissioner, appoint and remove all employes in their respective departments.

553. Said commissioner shall appoint all other employes in said department, and in addition to the number of clerks, assistants and employes regularly employed and provided for by ordinance, may appoint such other clerks, assistants and employes as he may deem necessary to properly perform the work in said department; and he may remove any such assistant, clerk or employe at his pleasure.

554. Said commissioner of public works shall be appointed by the mayor, by and with the advice and consent of the city council, on the first Monday in May, 1881, or as soon thereafter as may be, and biennially thereafter.

555. Said commissioner, before entering upon the duties of his office, shall execute a bond to the city of Chicago, in the sum of fifty thousand dollars, with such sureties as the city council shall approve, conditioned for the faithful performance of the duties of his office.

556. It shall be the duty of said commissioner to require good and sufficient bonds to be given by all subordinate officers and employes in said department of public works who shall receive or have the care, custody or handling of any moneys belonging to the city of Chicago; which said bonds shall be approved by the mayor.

557. Said commissioner shall have charge of all public improvements, commenced or to be commenced by said city, and of all special assessments; and shall have power, subject to the ordinances of the city, to regulate and control the manner of using the streets, alleys, highways and public places of the city, for the erection of telegraph poles or other poles and posts; for the laying down of gas, water or steam pipes and sewers authorized by law or the ordinances of the city, and to determine the location thereof; and to cause the prompt repair of the streets, alleys, highways and public places, whenever the same are taken

up or altered: *Provided, however*, that nothing herein contained shall be construed to repeal, or in any manner conflict with any provision of this ordinance creating the department of buildings: *and provided, further*, that the abatement and removal of all nuisances shall be in special charge of and under the control of the department of health.

558. It shall be the duty of said commissioner of public works, subject to the provisions hereof and the ordinances of the city, to take special charge and superintendence of all streets, alleys, lanes and highways in the city of Chicago, and of all walks and cross-walks, bridges, viaducts, docks, wharves, public places, public landings, public grounds and parks in said city; of all markets, market places and market houses; of all engine houses, hospitals, armories, and all other public buildings in the city, belonging to the city, and of the erection of all public buildings; of all lamps and lights for the lighting of streets, alleys, lanes, highways, bridges, viaducts, parks, public places and public buildings of the city, and of the erection and repair of such lamps and lights; of all works for the widening, deepening or dredging of the Chicago river and its branches, and of the harbor of said city; of all sewers and works pertaining thereto; and of the water-works of said city; and he shall collect all water rents, water taxes or assessments, water licenses and permits, and all sewerage permits and licenses.

559. Said commissioner shall control and direct all expenditures to be made by the department of public works; shall sign and draw his requisition upon the comptroller for the payment of all bills and accounts therefor which in his judgment are correct, and which may be duly certified by the superintendent under whose supervision the expenditure was incurred.

560. No payment shall be made on any work or job done by contract, for any extra work not specified in the contract, unless such extra work shall have been done by the written order

of the commissioner of public works, to be annexed to such contract, directing the same, and stating that such work is not included in the contract: *Provided,* that any order given under this section shall state what the extras are, and that such extras are necessary for the proper completion of, or for the security of, the work previously done, and the reasons therefor.

561. All moneys payable by the corporation, for work done or supplies furnished by contract or otherwise, under the department of public works, shall be paid by the comptroller upon the requisition of the commissioner of public works.

562. All contracts for the making of any public improvement to be paid for in whole or in part by special assessment, and any work or other public improvement, when the expense thereof shall exceed the sum of five hundred dollars, shall be let to the lowest responsible bidder, after advertising the same, and shall be approved by the mayor; but any such contract may be entered into by the said commissioner without advertising for bids, and without such approval, by a vote of two-thirds of all the aldermen elected.

563. Whenever any public improvement shall be ordered by the city council, which is to be paid for by special assessment, and the assessment for the same shall have been finally confirmed, and one-half of the special assessment shall have been paid into the city treasury, the commissioner of public works shall advertise in some newspaper printed in the city of Chicago, of general circulation, for proposals for doing said work: *Provided, however,* a contract for said work may be made before one-half of the special assessment is collected, if authorized by a vote of two-thirds of all the aldermen elected: *and provided, also,* when a portion of the work on any public improvement is done by private contract, under the authority of the city council, the remainder of the work upon such public improvement may

be let at any time after the assessment thereof shall have been ordered by the city council. A plan or profile of the work to be done, accompanied with specifications for the doing of the same, shall be first placed on file in the office of said department, before any such advertisement shall be made, which said plan, profile and specification shall, at all times, be open for public inspection; such advertisement shall be published on five separate days, the first publication to be not less than ten days before the day fixed for opening said proposals, and shall state the work to be done.

564. In all cases, the bids for doing any work, or making any public improvement, shall be sealed bids, directed to said department, and shall be accompanied with a deposit, the amount of which shall be fixed by said commissioner, and named in said advertisement, and which shall not exceed five per cent. of the estimated cost of the improvement or work to be done, nor be less than the sum of one hundred dollars. Said deposit shall be in money, or a certified check upon some Chicago bank, in good standing, payable to the order of said commissioner, and shall be forfeited to the city in the event that the bidder shall neglect or refuse to enter into a contract (with approved sureties) to execute the work for the price mentioned in his bid, and according to the plans and specifications, in case the contract shall be awarded to him. Said bids shall be opened at the hour and place mentioned in said notice; and should said bid or bids be rejected, or should it become necessary for any other reason, to re-advertise for proposals to do said work, such subsequent advertisement may be, at the discretion of said commissioner, for three instead of five days, as required in the first instance. Said commissioner may, in said advertisement, reserve the right to reject any and all bids.

565. All contracts, exceeding in amount the sum of five hundred dollars, for work, materials, or supplies relating to any of the matters under the cognizance of the department of public works, shall be let by the commissioner of public works to the lowest reliable and responsible bidder or bidders, whose bid does not exceed the estimate, and bonds to be approved by the commissioner, shall be taken for the faithful performance thereof; all such contracts shall be executed in triplicate by the commissioner of public works, on the part of the corporation, and by the contractor; one original copy so executed shall be kept and filed in the office of the commissioner of public works, one shall be filed in the office of the comptroller, and the third shall be given to the contractor. All contracts, and bonds so taken, shall be in the name of, and run to the city of Chicago; and every contract, for a sum greater than five hundred dollars, shall have the consent, in writing, of the mayor endorsed thereon, and shall be countersigned by the city comptroller.

566. No contract shall be made for any work or supplies relating to any of the matters within the cognizance of the department of public works, unless such work or supplies shall have been authorized by the city council, except that whenever any such work or supplies shall be necessary, and the total cost thereof shall not, in any one case, exceed five hundred dollars, the commissioner of public works may cause the same to be done or furnished, under the supervision of the appropriate officer of the department; but no such expenditure shall be made without the written order of the commissioner of public works, through his secretary, which order, when filled, shall be returned and filed as a voucher in said department, with the bill upon which payment was made.

567. In all cases, before such supplies, work, materials or necessaries of any kind shall be ordered or purchased by said department, exceeding in amount the sum of two hundred dollars, and not more than five hundred dollars, said commissioner shall first obtain, in writing, at least three informal bids to furnish

the same, which said bids shall accompany, and be filed in every case, with the voucher upon which the requisition for payment of same is issued.

568. In all contracts executed by said commissioner, on behalf of the city, the right shall be reserved to said commissioner to finally decide all questions arising as to the proper performance of said work; and in case of improper construction, or of noncompliance with the contract in any manner, to suspend said work at any time, or to order the partial or entire reconstruction of said work if improperly done, or to declare the contract forfeited, and to re-let the same without further advertisement; and to adjust the difference of damages or price (if any there be) which the contractor or contractors failing to properly construct such work in such cases of default, should pay to the city, according to the just and reasonable interpretation of said contract.

569. In cases where the contractor or contractors shall proceed to properly perform and complete their said contracts, the said commissioner may from time to time, as the work progresses, grant to said contractor or contractors an estimate of the amount already earned, reserving fifteen per cent. therefrom, which shall entitle the holder or holders to receive the amount that may be due thereon when the money applicable to the payment of such work shall have been collected, and the conditions annexed to said estimate, if any, shall have been satisfied.

570. All contracts entered into by the said commissioner of public works on account of the water or sewerage works of the city, shall specify that they are for such works.

571. All contracts in which the contractor or contractors agree to be paid from special assessments, shall contain covenants in substance to the effect that such contractor or contractors

shall have no claim or lien upon the city in any event, except from the collection of the special assessments made for the work contracted for; and that no liability of any kind shall attach to the city by reason of the entering into such contract, except for the payment over to such contractor or contractors of moneys received by the city under special assessments levied or to be levied for the improvement specified in such contract, and no contract for work to be paid for by a special assessment shall be let except to a contractor or contractors who will so agree.

572. In case the prosecution of any public work shall be suspended in consequence of the default of any contractor or contractors, or in case the bids for doing such work shall be deemed excessive, or the person or persons making proposals are not, in the opinion of said commissioner, responsible or fit to be entrusted with its performance, the said commissioner of public works may, with the approval of the city council, where the urgency of the case and the interests of the city require, employ workmen to perform or complete any improvement ordered by the city council: *Provided*, that the cost and expense thereof shall in no case exceed the amount assessed or the sum appropriated for completing the same.

573. Whenever said commissioner or any other city officer shall let any work or improvement which shall require the digging up, use or occupancy of any street, alley, highway or public grounds of said city, there shall be inserted in the contract for the same, substantial covenants requiring such contractor, during the night time, to put up and maintain such barriers and lights as will effectually prevent the happening of any accident in consequence of such digging up, use or occupancy of any street, alley, highway or public grounds, for which the city might be liable, and also such other covenants and conditions as experience may prove necessary to save the city harmless from damages. And also to provide in such contract, that the party contracting with the city shall be liable for all damages occasioned

by the digging up, use or occupancy of such street, alley, highway or public grounds, or which may result therefrom, or which may result from the carelessness of such contractor, his agents, employes or workmen.

574. Whenever any work or improvement is let by contract, to any person or persons, firm or corporation, the officers of the city letting the same shall, in all cases, take a bond from such person, persons, firm or corporation, with good and sufficient sureties, in such amount as shall not only be adequate to insure the performance of the work in the time and manner required in such contract, but also to save and indemnify and keep harmless the said city against all liabilities, judgments, costs and expenses which may in any wise accrue against said city in consequence of the granting of such contract, or which may in any wise result from the carelessness or neglect of such person, persons, firm or corporation, or his, their or its agents, employes or workmen, in any respect whatever; and conditioned also, that when any judgment is recovered against said city by reason of the carelessness or negligence of such person, persons, firm or corporation so contracting, or his, their or its employes or workmen, and when due notice has been given of the pendency of such suit, such judgment shall be conclusive against such person, persons, firm or corporation, and his, their or its sureties on such bond, not only as to the amount of damages, but as to their liability: and conditioned also for the payment of all claims and demands whatsoever which may accrue to each and every person who shall be employed by such contractor, or any assignee or sub-contractor of such contractor, in or about the performance of such contract.

575. It shall be the duty of the commissioner of public works, in letting any contract for any sewer, public improvement or other work, to insert in the contract therefor, a condition to the effect that it shall and may be lawful for said commissioner, whenever he shall have reason to believe that the contractor has

neglected or failed to pay any sub-contractor, workman or employe for work performed on or about any public improvement, sewer or other work contracted for, to order and direct that no further vouchers or estimates be issued, and no further payments be made upon such contract until such commissoner shall be satisfied that such sub-contractors, workmen and employes have been fully paid. Every such contract shall also provide, that a certain percentage (not less than fifteen per cent.) shall be reserved out of the moneys earned upon such contract, and that such percentage shall not be payable until such contractor shall satisfy such commissioner or officer letting such contract that all sub-contractors, workmen and employes have been fully paid.

576. Whenever the commissioner shall notify the contractor by notice personally served, or by leaving a copy thereof at the contractor's last place of abode, that no further vouchers or estimates will be issued, or payments made on the contract until the sub-contractors, workmen and employes have been paid, and the contractor shall neglect or refuse, for the space of ten days after such notice shall have been served, to pay such sub-contractors, workmen or employes, it shall and may be lawful for the city to apply any money due, or that may become due under the contract, to the payment of such sub-contractors, workmen and employes without other or further notice to said contractor; but the failure of the city to retain and apply any of such moneys, or of the commissioner to order or direct that no vouchers or estimates shall issue, or further payments be made, shall not, nor shall the paying over of such reserved percentage, without such sub-contractor, workman, or employe being first paid, in any way affect the liability of the contractor or of his sureties to the city, or to any such sub-contractor, workman or employe upon any bond given in connection with such contract.

577. All sewers and drains in any of the streets, alleys, avenues, or public places in the city shall be under the charge of the

department of public works, which shall keep the same in good order and condition, and clean and free from obstructions, and shall cause to be made such repairs thereof and of the receiving-basins, culverts, and openings connected therewith, as may from time to time become necessary.

578. The commissioner of public works shall prescribe the mode of piercing or opening any of the sewers or drains, and the form, size, and material of the connections made therewith, and shall have authority to grant permission to make lateral connections with said sewers.

579. No connection shall be made with any sewer or drain without the written permission of the commissioner of public works; nor shall any person drain from any point within the limits of the city of Chicago, into the Chicago river or any of its branches, or into any slip connecting therewith, or into any canal or canals constructed under the authority of said city, without first obtaining a permit for such drainage from said commissioner of public works; and said commissioner is hereby authorized to grant such permits, and to exact a license fee therefor, to be fixed by said commissioner, which said license fee shall be equal to an amount sufficient to defray the expense imposed upon the city, in consequence of granting such permission. And any person making any connection or opening into any sewer or drain, or draining from any point within the city limits into the Chicago river or its branches, or into any canal or canals as aforesaid, without such permission, or in a manner different from the mode prescribed by said commissioner, shall subject the person making the same and the person directing it, respectively, to a penalty of fifty dollars, and twenty-five dollars for each and every day the same is continued.

580. The commissioner of public works may grant permission to persons to construct, at their own expense, sewers or drains, to lay pipes to connect with any sewers or drains built in

any of the streets, alleys or avenues in the city, charging a license fee therefor, of five dollars in each case; but such permission shall not be granted except upon the agreement, in writing, of the persons applying therefor, that said work shall be performed by some person or persons duly licensed therefor, and that they shall comply with the ordinances in relation to excavating the streets; that they will indemnify the corporation for any damages or costs to which it may be put by reason of injuries resulting from neglect or carelessness in performing the work so permitted; and that no claim will be made by them or their successors in interest against the corporation, if the work so permitted to be taken up by the authority of the city council, or for exemption from an assessment lawfully imposed for constructing sewers or drains in the vicinity of their property; and upon the further condition that the city council may at any time revoke and annul such permission, and direct such sewers, drains, or pipes to be taken up or removed.

581. No permit shall be granted to any person or persons, corporation or corporations, to open a paved or improved street or alley, unless the party applying therefor shall have first deposited with said commissioner a sum of money sufficient to cover the expense of replacing the same in as good condition as before opening. Said opening shall in every case be replaced by the city, and the actual cost thereof shall be borne and paid by the person or persons, corporation or corporations, for whom such opening was made.

582. The commissioner of public works shall keep a record of all permits granted for connections with sewers or drains, in which he shall enter the names of all persons from whom he may receive money for such permits, with the amount received from each person, and the time when it was received.

583. When the expense of any work or public improvement shall exceed the sum of five hundred dollars, and the same is to be paid out of the general fund, or the water or sewerage fund of

said city, the doing of said work shall be let by contract, in the same manner as is provided in cases where the expense of the same is to be paid for by special assessment.

584. In all cases, before the letting of any contract, where bonds are required to be taken by the commissioner of public works, the sureties therein shall deposit with said commissioner a statement, under oath, showing the real property owned by each surety, the location of the same, its value, and the amount of incumbrance or incumbrances, if any, thereon.

585. All moneys to be paid to any person or persons out of the water or sewerage funds, or any special assessment fund shall be certified by the commissioner of said department, or, in his absence from the city, or incapacity by sickness, to act, by the mayor of the city, to the city comptroller, and a warrant therefor shall be drawn, stating therein the particular fund to which the same is chargeable.

586. Neither the commissioner of said department, nor any superintendent, officer, clerk, or other person employed in said department, shall be interested, directly or indirectly, in any contract made or entered into by said department for any work or for any material to be furnished, and all contracts made by said department in which the said commissioner, or any officer or employe of said department, shall be so interested, shall, at the option of the city, be declared utterly void, and of no binding effect whatever, and any officer of said department interested in any contract shall thereby forfeit his office, and be removed therefrom on proof of such delinquency, and it is hereby made the duty of said commissioner, and of the mayor, and of every city officer, to report to the city council any such delinquency when discovered.

587. No officer or employe of said department shall, either directly or indirectly, receive any interest or profit whatever, on

account of the deposit of the city funds, nor shall any such officer or employe, either directly or indirectly, make use of or borrow any of said funds for his own private benefit or advantage.

588. Said commissioner shall, on or before the first day of May in each year, prepare and present to the city council a report showing the receipts and expenditures and entire work of his department during the previous fiscal year.

589. The commissioner of public works shall, within thirty days after the commencement of each fiscal year, submit to the comptroller, to be by him laid before the city council with his annual estimates, a statement, as near as the same can be estimated, of the repairs and improvements to be paid for out of the general fund of the city, and necessary to be undertaken by said city during the current year, and of the sums required by said department to make such repairs and improvements, as near as can be estimated; and also, a statement as to any desired improvements, with the probable expense thereof; and of all contracts made and unfinished; and the amount of any and all unexpended balances of appropriations of the preceding and prior years. Said report shall be in detail. The city council, having revised, changed or altered the estimates so submitted, may provide for raising the same, in the annual appropriation bill or ordinance.

590. It shall be the duty of said commissioner to cause to be kept books of account, in such manner as to show with entire accuracy, the receipts and expenditures of said department, and in such manner that the same may be readily understood and investigated; and also to preserve on file in said department duplicate vouchers of all the expenditures of said department, which books and vouchers and all papers and files of said department shall be at all times open to the examination of the comptroller, the finance committee, or any member of the city council.

591. The commissioner of public works shall in all matters whereby, by reason of any ordinance, resolution, agreement, or act, heretofore passed, entered into or done, the action of a board of public works is necessary, constitute a board of public works for such purpose, and shall do and perform all things required to be done by or imposed upon said board.

592. In all cases where provision is made by ordinance that the consent of the commissioner of public works shall be obtained to authorize any act to be done, he may grant a permit therefor, subject to the restrictions of the ordinances in relation thereto.

593. The commissioner of public works may direct the removal of any article or thing whatsoever, which may encumber or obstruct any street, avenue, or alley in the city of Chicago, under the penalties prescribed by law.

594. The commissioner of public works shall, when required by the city council, inquire into and report upon any of the matters within the cognizance of the department of public works, and shall, from time to time, communicate to the city council any information or suggestion which he may deem important in relation thereto.

595. All subordinate officers, assistants, clerks and employes employed in said department shall be subject to such rules and regulations as shall be prescribed from time to time by said commissioner.

ARTICLE II.

THE COMMISSIONER'S SECRETARY.

596. There shall be in the office of the department of public works a person to be denominated secretary to the commissioner of public works, whose duty it shall be to preserve and

keep all books and papers belonging to said department, or which are required by law to be filed therein.

597. He shall deliver to the city council and to the respective departments, all communications from the said commissioner in writing, and shall attend in the office of said department during the usual office hours, and do and perform such other services as may be required by said commissioner.

ARTICLE III.

THE CITY ENGINEER.

598. The city engineer shall perform such duties as may be required of him by the commissioner of public works, or the ordinances of the city.

599. He shall perform all such services in the prosecution of public improvements, as may require the skill and experience of a civil engineer.

600. He shall have charge of the construction and repairing of all bridges, viaducts and water works, and shall superintend the laying of all main and supply water pipes.

ARTICLE IV.

THE SUPERINTENDENT OF STREETS.

601. The superintendent of streets shall perform such duties as may be required of him by the commissioner of public works, or the ordinances of the city.

602. He shall have charge of the improvement, repair and cleaning of all streets, avenues, alleys and highways in the city of Chicago, and the construction and repair of all sidewalks.

ARTICLE V.

THE SUPERINTENDENT OF WATER.

603. The superintendent of water shall perform such duties as may be required of him by the commissioner of public works, or the ordinances of the city.

604. He shall have special charge of the assessment and collection of all water rates or assessments.

605. Said superintendent shall report to the city treasurer, once in each day, all moneys received by him in said department of public works, and at the same time pay over to the said city treasurer all such moneys, with a statement of the same: to what account the same belongs,—and shall take a receipt and duplicate receipt for all moneys so paid over, which said duplicate receipt he shall deposit forthwith with the said commissioner of public works.

ARTICLE VI.

THE SUPERINTENDENT OF SEWERAGE.

606. The superintendent of sewerage shall perform such duties as may be required of him by said commissioner of public works, or the ordinances of the city.

607. He shall have special charge of the construction of all public and private sewers and catch-basins, and the issuing of all permits and licenses in connection therewith.

ARTICLE VII.

THE SUPERINTENDENT OF SPECIAL ASSESSMENTS.

608. The superintendent of special assessments shall be *ex officio* examiner of subdivisions, and it shall be his duty to examine all plats and maps of subdivisions of land in the city of Chicago, upon presentation of the same to him, and if he shall

approve of the same he shall so certify. He shall also perform such duties as may be required of him by said commissioner of public works or the ordinances of the city.

609. He shall have special charge of all proceedings connected with the making of special assessments, subject to the directions of the corporation counsel.

ARTICLE VIII.

THE SUPERINTENDENT OF MAPS.

610. The superintendent of maps shall perform such duties as may be required of him by said commissioner of public works, or the ordinances of the city.

611. He shall have special charge of all matters pertaining to the keeping of the records of maps, plats, &c., recorded in the city of Chicago; and of all matters pertaining to street numbers; and he shall make all maps and drawings which may be required by said department.

REPORT

OF THE

Commissioner of Public Works

CITY OF CHICAGO.

COMMISSIONER'S REPORT.

OFFICE OF THE COMMISSIONER OF PUBLIC
WORKS, CITY HALL.

To the Honorable, the Mayor and City Council of the City of Chicago.

GENTLEMEN :—In submitting to your Honorable Body, the Thirteenth Annual Report of the Department of Public Works, for the year ending December 31, 1888, I take pleasure in referring you to the statements of the various heads of Bureaus, which will furnish you information in detail, as to the quantity, class and cost of improvements done under their supervision.

The improvements undertaken and completed are largely in excess of any previous year, and have taxed the ability and energy of the Department to the fullest extent in their successful completion. The increased number of miles of streets improved, the water mains laid and sewers constructed, with a greater number of bridges and viaducts erected than for several previous years, combined with other minor improvements, proportionately increased, indicate an extraordinarily active year for the Department. And further, the successful completion of these extensive undertakings with a limited appropriation, requiring the adoption and enforcement of rigid economy in the employment of labor and the purchase of material, with the advantage of sharp competition in letting of contracts, has resulted in giving to the city a class of public improvements superior in quality at a minimum cost, which, I trust, will be satisfactory to your Honorable Body.

EXTENSION OF WATER SYSTEM.

44.52 miles of water pipe, from four to thirty-six inches in diameter, were laid during the year, making a total of 677.08 miles now laid in the city.	
385 new water valves were added: total in place	5,099
519 new fire hydrants were added: total in place	6,367
2 fire cisterns were constructed, making a total of	53
10,089 new house service taps were added, making a total of	125,667
10,089 new house service pipes were added, making a total of	125,667
The number of service taps inserted in water mains, including re-taps, is	11,564

EXTENSION OF SEWERAGE SYSTEM.

There were constructed during the year 19.86 miles of brick and pipe sewers, from twelve inches to 7½ feet in diameter, making a total of	492.38	miles.
816 new catch-basins were added, making a total of	16,050	
674 man-hole chambers were added, making a total of	17,577	
Old catch-basins were raised to grade, numbering	2,231	
Old man-hole chambers raised to grade, numbering	2,250	
Old catch-basins and man-holes repaired, numbering	43	
Number of catch-basins cleaned	10,929	
Sewers cleaned to the extent of	249½	miles.
House drains laid, amounting to	30	miles.

STREET IMPROVEMENTS.

There were 1,049,201.55 square yards, or 54.33 miles of streets paved during the past year.

There were 97,285 square yards of street pavement repaired, and 2.67 miles of street planked.

There were 95,430 square yards of pavement laid by the various street railway companies in streets occupied by their tracks.

Total streets paved in the city	348.53 miles.
New sidewalks constructed	37.13 miles.
Sidewalks reconstructed	147.23 miles.
Sidewalks repaired	123.73 miles.
Total sidewalks in city	1,161.11 miles.
Streets cleaned	5,739.10 miles.
Number of aprons, culverts, crossings, etc., built	9,510
Number of street lamps erected, (gas)	2,076
Number of street lamps erected, (oil)	2,184
Total number of street lamps in the city	25,078
Street lamps repaired	62,207
Number of buildings removed	1,313

MAPS AND PLATS MADE.

For new subdivisions	245
For opening, widening and vacating streets and alleys	528
For sidewalks	339
For lamp posts	1,368
For law department	145
For miscellaneous purposes	174
For city map	1
Total	2,800

TOTAL ASSESSMENTS PREPARED.

For improvement of streets and alleys	249
For private drains	104
For water service pipes	134
For street and alley openings	6
For new sidewalks	439
For gas lamps	134
For Dyatt champion lamps	2
For oil lamps	33
Total	1,101

MISCELLANEOUS.

SPECIAL IMPROVEMENTS.

Constructing House of Correction with residence for the Superintendent.

Police station building, No. 480 North avenue.

Police station building, corner of Morgan and Maxwell streets.

Police station building, Nos. 526 and 528 Warren avenue.

Police station building, No. 2913 Deering street.

Engine-house for Fire Department, No. 1494 West Lake street.

Repair Shop for Fire Department, No. 173 and 177 Sebor street.

Dredging Chicago River and branches.

Pumping machinery for new works.

Sweeping and cleaning improved streets.

Constructing viaduct over railroad tracks at Western avenue.

Constructing viaduct over railroad tracks at Thirty-fifth street.

Constructing viaduct over railroad tracks at Ashland avenue.

Constructing viaduct over railroad tracks at Twelfth street.

Constructing viaduct over railroad tracks at Dearborn avenue.

Constructing bridge over Chicago River at Deering street.

Central pumping station building, Harrison street.

South pumping station building at Fourteenth street and Indiana avenue.

Completing protection around crib at old water tunnel.

Constructing approach and viaduct, Fifth avenue to Twelfth street.

Constructing approach and viaduct, Polk street to Fifth avenue.

New four-mile lake tunnel for new pumping works.

Constructing new crib at end of new tunnel.

CONTRACTS.

Contracts were entered into by the city, for public improvements and various classes of material under the immediate supervision of this Department, incurring an expenditure of $4,028,621.90 as follows:

199	contracts for street and alley improvements, at a cost of	$1,630,964	78
23	contracts for curbing, filling and grading streets, aggregating	107,204	04
118	contracts for water-service pipes, costing	89,934	96
100	contracts for private house drains, costing	65,979	92
17	contracts for constructing sewers, aggregating	175,957	82
7	contracts for erecting police stations, costing	45,886	00
2	contracts for constructing fire engine houses, costing	22,494	00
3	contracts for building House of Correction, aggregating	28,872	00
1	contract for finishing sewer pipe, aggregating	3,498	57
2	contracts for furnishing pine lumber, aggregating	5,850	59
3	contracts for furnishing oak lumber, aggregating	9,623	23

4	contracts for castings for water pipes, aggregating	$ 32,000	00
2	contracts for furnishing cast iron water pipe, aggregating	170,011	00
1	contract for castings for sewer work, aggregating	16,636	00
1	contract for furnishing brass castings for water department, aggregating	4,905	00
1	contract for furniture for Council chamber	798	00
1	contract for furnishing lamp posts.	3,123	00
1	contract for glass for street lamps.	4,890	72
9	contracts for completing rotunda..	20,400	00
1	contract for completing Library rooms	2,610	00
1	contract for sweeping and cleaning streets	88,168	41
1	contract for dredging Chicago River and branches	41,588	90
1	contract for pumping machinery for new works	369,785	00
12	contracts for constructing viaducts, aggregating	612,901	91
10	contracts for erecting Central pumping station building	111,018	19
12	contracts for coal for pumping stations, City Hall, bridges, shops etc.	274,549	00

3 contracts for pig lead for laying water mains	$33,160	00
1 contract for sub-structure and approaches to Deering street bridge.	9,964	42
3 contracts for teaming for water and sewerage departments	26,697	95
1 contract for steam tug service to Lake crib	1,750	00
1 contract for paving-cement for street work	17,398	49
Total,	$4,028,621	90

FINANCIAL.

Statement of the sum appropriated by the City Council, together with various amounts from other sources, to be expended in public improvements under the supervision of the Department, for the year 1888:

Balance Jan. 1, 1887, to credit of water, sewerage, general appropriation and City Hall funds	$1,449,235	33
From appropriations for 1888	1,782,495	65
From rent of Rookery lot	35,000	03
From interest on water fund investment	24,371	20
From premium on water loan bonds...	5,383	00

From street lamps, special assessments and other funds	$ 183,153	01
From private parties, money advanced	25,867	00
From water revenue, including tapping permits	1,595,528	08
From drain permits and drain layers' licenses	42,097	50
From railroad companies, on account bridges and viaducts	209,449	52
From house-moving permits	3,676	00
From special deposits for street permits	8,800	00
From labor and for material sold	110,417	35
From vouchers deposited back, and miscellaneous	7,597	74
From special assessments	3,655,956	78
Total	$9,139,028	19

Of this amount, expenditures have been made as follows from general appropriation, sewerage and City Hall funds in 1888:

For bridges and viaducts, dredging, street cleaning, public buildings, tunnels, Canal pumping works, Fullerton avenue pumping works, parks, work for private parties, salaries, City Hall, constructing and maintaining sewers and catch-basins	$2,426,835	50

For water supply, pipe extension..........	$403,718	06
For private work by water department...	38,575	38
For extension of North pumping works......	527	00
For investment in city bonds.............	532,000	00
For new shore inlet...	27,693	49
For interest on water loans.............	262,124	50
For real estate.......	148,221	25
For South Side pumping works.........	14,587	60
For Central pumping works............	62,684	46
For crib protection....	113,466	35
For new land tunnel..	29,097	46
For new lake tunnel..	197,579	35
For maintenance of water system, operating pumping works, cost of collecting water taxes etc....	591,167	15
For street improvements, street openings, sidewalks, private drains, water service pipes, and lamp posts.........	1,914,605	19

For rebate (excess of assessments over cost of improvements), abatements to property owners doing their own work, land damages and assessments held over and annulled by the City Council...........	$1,741,351 59	$8,504,234 33

BALANCE.

December 31, 1888, to credit of water, sewerage, City Hall and general appropriation funds.........		634,793 86
		$9,139,028 19

WATER WORKS.

One of the most important subjects demanding our attention and earnest care, is the supplying of our citizens with an abundance of clean, pure water. A marked and decidedly satisfactory improvement has been made in this direction during the past year. Water of good quality and sufficient quantity has invariably been supplied.

The selection by Mayor Roche of Mr. F. W. Gerecke, to take supervision of the water works system of the city, has proved a most judicious one. Competent, industrious, watchful, he has fulfilled expectations, and redeemed the promises made in a preliminary report of February last. I earnestly recommend the perusal of his annual report. It is interesting and instructive, and will give you an idea of what has been accomplished in less than a year.

On September 11 last, the Murphy smokeless furnace was put under two of the boilers at the North Side water works, enabling us to use soft instead of hard coal, thereby effecting a saving of $32.00 to $35.00 per day. Their introduction under all the boilers will effect a saving of about $110 per day in the use of bituminous in place of anthracite coal.

At these works I would recommend that the old machine shops, paint shops and barns be taken down, the basin filled in, and the ground laid out in parks, thus beautifying the works and bringing them into harmony with the surroundings ; the costly and beautiful homes of many of our most wealthy citizens being in the vicinity.

As will be seen by the report of Chief Engineer Gerecke, the West Side pumping works at Twenty-Second street and Ashland avenue, have been quite thoroughly overhauled, resulting in making more effective and largely increasing the pumping capacity of that station.

At these works the enormous quantity of over twenty-one billion gallons of water has been pumped during the past year. To be exact, 21,046,189,980 gallons, at a cost of $4.65 per million gallons. The pumpage at the North Side works was 15,503,534,775 gallons, and would have been much larger had the pumps been in good order the full time.

Our pumping capacity, as repaired, refitted and reorganized, is now equal to our present tunnel capacity. The completion of the new inlet, 1,500 feet into the lake, has been accomplished, and in case of emergency can be used to furnish pure water.

The protection to the crib has also been completed during the year, and has been pronounced, after a critical examination, a most excellent work of engineering skill. It was not accomplished any too soon, as the crib had begun to show signs of weakness and decay, the result of combined battles with sea and ice.

During the summer months, all restrictions concerning the use of water were removed, and notwithstanding that fact, and the further fact that over *forty-one miles* of additional mains were laid, and over *ten thousand* service taps put in, there was an abundance of water at all times.

In contrast with the previous year, when we were pumping wind instead of water, there was not a solitary complaint of scarcity. On the other hand, numberless words have come from the press and from individuals, commendatory of the improved condition of our water works system and the unlimited quantity of water supplied. With Lake Michigan at our very doors, I see no reason why any man, woman or child in Chicago should be stinted in the slightest degree in the use of water.

I do not wish to be understood as recommending any needless waste of anything even as free as water; but if any operation can be better performed, even in the slightest degree, with the use of a gallon instead of a pint, I consider it our city's duty to furnish the gallon. We have done all that can be done toward putting our people in that condition which we have scriptural authority for believing is next to Godliness.

In connection with this subject, I would recommend the establishment by the city of a number of free bath houses, both floating and permanent, with attendants.

It would, I have no doubt, prove beneficial to a large number of people. Our city is behind the times in this respect.

Since our last report, the contractor for the new and extensive lake tunnel has been energetically at work, and at present writing has about finished the land portion of the undertaking, to-wit: from Peck court south to Fourteenth street, the site of the South Side water works, and from Peck court west to Harrison and Desplaines streets, the site of the new West Side station. He has also progressed quite a distance out under the lake. A description of the new works, engines, pumps etc., is given in detail in the report of the City Engineer.

Upon the completion of this vast work, and the adding of the high-pressure system so ably advocated and explained by his Honor, Mayor Roche, Chicago will stand unexcelled in the vastness and completeness of her water works system. The inexhaustibility of the supply, and Chicago's rapidly growing needs, warrant the necessary expenditure.

NORTH PUMPING WORKS.

(FOUR DOUBLE AND TWO SINGLE ENGINES).

The repairs and changes made on the North pumping works machinery have added materially to their usefulness, and they are now in condition to furnish daily to the city their full registered capacity of gallons, giving to the citizens an ample and generous supply of water.

The quantity furnished by these works for the past year was 15,503,534,775 gallons, an average of 42,475,712 gallons per day under a head of 100 feet.

The cost of pumping and other expenses at these works, including coal and stores on hand, general repairs etc., for the past year, was $158,543.46.

WEST PUMPING WORKS.

(FOUR ENGINES.)

The quantity of water pumped at these works during the year was 21,046,189,980 gallons, being an average of about 57,660,794 gallons per day under a head of 100.5 feet.

Expenses due to pumping are.....	$97,989 26
Other expenses at these works....	3,470 39
Total......................	$101.459 65

The quantity of water pumped by these combined works during the year was 36,549,724,755 gallons, being equal to a daily average of about 100,136,506 gallons.

The total average pumping capacity of the engines now in use in the city is 153,000,000 gallons for each twenty-four hours. The greatest quantity of water pumped in any one day during the year occurred June 20th; 120,745,850 gallons.

PIPE SYSTEM.

Water pipes were laid during the year as follows:

Four (4) inch	9,771 feet.
Six (6) inch	124,448 feet.
Eight (8) inch	60,543 feet.
Twelve (12) inch	20,523 feet.
Sixteen (16) inch	17,021 feet.
Twenty-four (24) inch	2,730 feet.
Total	235,036 feet.

The whole being equal to 44.52 miles. Small pipe taken up and abandoned 5.70 miles; net pipe added to the system during the year 38.84 miles—a total of 677.08 miles of pipe laid in the city at the close of the year.

Fire hydrants placed in position during the year	519
Hydrants taken out and replaced by others of different sizes	51
Net number of hydrants added to the system	468
Total number of fire hydrants now in use	6,367
Stop valves put in place during the year	385
Stop valves taken out and replaced by others of different sizes	22
Net number of stop valves added to the system	362
Total number now in use	5,099

WATER METERS AND ENGINES.

Number of new meters put in during the year.	213
Number of old meters removed	364
Net decrease	151
Total number of meters now in use	3,122
Number of city meters removed and replaced by new ones	105
Total number of meters repaired	1,470

The revenue derived from water measured by these meters and engines for the past year amounts to $517,517.05, an increase of $18,283.10 over the amount collected from the same source last year.

WATER WORKS RECEIPTS AND EXPENDITURES FOR 1888.

RECEIPTS.

Water rates collected (including delinquents)	$1,557,116	78
Water service cocks (permits and plumbers' licenses)	38,411	30
Water meters, labor etc., for private parties	42,830	03
Rent of Rookery lot	35,000	03
Advances to lay water pipe	16,122	00
Premiums on water loan bonds	5,383	00
Interest from investment	24,371	20
Old material sold	7,593	26
Miscellaneous	1,065	97
Total	$1,727,893	57

EXPENDITURES.

For salaries and other expenses, Water collection office	$ 125,743	40
For salaries and other expenses paid from water fund	6,753	54
For expenses for Tapping department	39,068	70
For meters, fitting and private work	38,575	38
For interest on water loan bonds	262,124	50
For brick and other material	13,286	46
For water works repairs	109,851	23
For North pumping works	158,543	46
For investment in city bonds	532,000	00
For new lake tunnel	197,579	35
For North pumping works extension	527	00
For West pumping works	98,965	68
For new shore inlet	27,693	49
For lake tunnel crib	7,030	86
For real estate	148,221	25
For Central pumping works	62,684	46
For South Side pumping works	14,587	60
For crib protection	113,466	35
For new land tunnel	29,097	46
For advances for laying water pipe refunded	19,725	42
For water rates refunded	137	08
For water pipe extension	403,718	06
For miscellaneous	12,061	32
Total	$2,421,442	05

Total cost of water works of the city to December 31, 1888, is as follows:

Cost up to May 6, 1861, when the works were transferred from the Board of Water Commissioners to the Board of Public Works......	$1,020,160	21

EXPENDITURES SINCE 1861.

Cost of water pipe laid (including labor).........................	$7,245,048	20
Cost of North pumping works	918,573	14
Cost of West pumping works.......	894,565	75
Cost of first lake tunnel............	464,866	05
Cost of second lake tunnel..........	415,709	36
Cost of lake crib protection.........	113,466	35
Cost of new lake tunnel............	202,298	01
Cost of land tunnel................	542,912	63
Cost of new land tunnel............	29,788	32
Cost of lake tunnel crib............	70,319	10
Cost of lake shore inlet.............	42,871	17
Cost of new lake shore inlet.........	89,474	17
Cost of water works shop..........	25,551	73
Cost of water works stock..........	29,318	00
Cost of water reservoir fence........	1,702	87
Cost of addition to stable	1,019	48
Cost of real estate for sites of new pumping works.................	205,472	35

Cost on account of Central pumping works	$62,684 46
Cost on account of South Side pumping works	14,587 60
Cost on account of new lake crib	75 00
Total cost of the entire water works to December 31, 1888	$12,390,463 95

Paid for as follows:

From general taxes	$2,713,878 53	
From water loan bonds, 6 per cent	132,000 00	
From water loan bonds, 7 per cent	3,340,000 00	
From water loan bonds, 3.65 per cent	333,000 00	
From water loan bonds, 4 per cent	150,000 00	
From water loan bonds, cancelled	859,000 00	
From surplus revenue	4,862,585 42	$12,390,463 95
Total water works income to December 31, 1888		21,384,508 55
Total operating expenses and maintenance to December 31, 1888, including interest, $6,454,694.75 on bonded debt and bonds cancelled		15,024,445 81
Total surplus revenue over total expenditure		$6,360,062 74

Accounted for as follows:

Cash balance in treasury December 31, 1888..	$386,603 15	
Paid toward water works construction........	4,862,585 42	
American Exchange National Bank, N. Y....	125,734 03	
F. C. Meyer, bookkeeper, (discharged men's fund)	300 00	
R. N. Pearson, Cashier, (petty cash)........	691 88	
Meter department, stock on hand.......... .	12,414 57	
Tapping department, stock on hand......	6,641 48	
Shop and stable, stock on hand............	10,111 50	
Invested in city bonds.	875,280 00	
Water pipe etc., on hand	117,996 94	$6,398,358 97
Less amount due depositors for hydrant wrenches...........	$1,010 00	
Less amount advanced by private parties to lay water pipe in non-paying districts.....	37,286 23	38,296 23
		$6,360,062 74

BONDED DEBT OF WATER WORKS.

Water loan bonds outstanding December 31, 1888, bearing 7 per cent. interest, and maturing as follows:

July 1, 1889	$225,000 00	
July 1, 1890	268,000 00	
July 1, 1892	821,000 00	
July 1, 1894	541,000 00	
July 1, 1895	1,485,000 00	
		$3,340,000 00

Bearing 6 per cent., maturing as follows:

July 1, 1897	$50,000 00	
July 1, 1898	82,000 00	
		$132,000 00

Bearing 3$\frac{65}{100}$ per cent., maturing as follows:

July 1, 1902	$333,000 00
July 1, 1908, bearing 4 per cent. interest	150,000 00
Grand total	$3,955,000 00

Net cash balance to credit of water fund, December 31, 1888	$386,603 15
Total interest paid on water loan, to January 1, 1889	$6,454,694 75

The following table indicates the quantity of water furnished, the total revenue received, and the average amount per million gallons annually, from 1858 to 1888, both years inclusive, excepting the quantity furnished in 1887:

YEAR.	MILLION GALLONS FURNISHED.	REVENUE.	REVENUE PER MILLION GALLONS.
1858	1,092	$102,178 85	$93 57
1859	1,415	122,753 50	86 70
1860	1,717	131,162 73	76 39
1861	1,766	131,035 10	74 15
1862 (15 months)	2,705	188,448 25	85 00
1863 (9 months)	2,336	192,246 39	82 29
1864	2,523	224,902 57	89 14
1865	2,778	253,114 49	91 11
1866	3,169	302,017 59	95 30
1867	4,232	338,929 28	80 08
1868	5,375	420,686 94	78 26
1869	6,801	476,968 24	70 13
1870	7,945	539,180 19	67 86
1871	8,423	445,834 64	52 93
1872	10,051	544,465 90	54 17
1873	11,723	708,804 32	60 46
1874	13,903	705,926 64	50 77
1875 (9 months)	10,957	635,996 54	58 04
1876	15,346	771,940 38	50 30
1877	19,047	908,509 64	47 70
1878	19,564	944,190 97	48 31
1879	20,557	922,001 26	44 85
1880	21,002	865,618 35	41 21
1881	23,331	936,922 07	40 16
1882	24,150	1,049,576 90	43 46
1883	26,742	1,142,868 54	42 73
1884	29,286	1,204,338 74	41 12
1885	33,451	1,339,038 00	40 03
1886	35,693	1,374,837 32	38 52
1887	....	1,490,023 68	....
1888	36,550	1,557,116 78	42 60

Under the various orders and ordinances of the City Council, amounts have been rebated on water rates during the year, as follows:

On educational, religious and charitable institutions, under ordinance of November 21, 1884	$12,350 64
Municipal and Board of Education, under ordinance of July 30, 1885	19,951 10
On private residences by various orders passed by the City Council	147 50
Total amount rebated	$32,449 24

SEWERS.

The sewerage system has been extended in the various divisions of the city during the past year as follows:

Constructed in the West Division	15.146 miles
Constructed in the South Division	2.832 miles
Constructed in the North Division	1.888 miles
Total	19.866 miles

Number of catch-basins built	816
Number of man-hole chambers built	674

The cost of constructing sewers and catch-basins during the year was as follows:

West Division	$181,246 62
South Division	29,839 93
North Division	17,481 02
Total	$228,567 57

Total number of miles of sewers in the city December 31, 1888	492.37
Total number of catch-basins.........	16,050
Total number of man-hole chambers..	17,577

MAINTENANCE.

The cost of cleaning and repairing sewers, the cost per mile, and number of miles; also the number of catch-basins and man-hole chambers distributed in the three divisions of the city, is as follows:

DIVISIONS.	MILES OF SEWERS.	NUMBER OF CATCH-BASINS.	NUMBER OF MAN-HOLE CHAMBERS.
West..	278.63	8,837	9,862
South.............	132.47	4,506	4,782
North	81.27	2,707	2,933
Totals.........	492.37	16,050	17,577

The cost of repairing sewers during the year was $8,722.38, being an average cost of $17.71 per mile.

The cost of cleaning was $52,422.41, making the average cost $106.47 per mile.

The total cost of both repairs and cleaning was $61,144.79, an average cost of $124.18 per mile.

Of the 492.37 miles of sewers constructed, 248,033 miles are of brick, and 244,337 miles of vitrified pipe.

TOTAL COST OF SEWERS ETC.

DIVISIONS.	MILES.	COST.	AVERAGE COST PER MILE.
West	278.63	$4,029,719 31	$14,462 61
South	132.47	1,897,907 90	14,327 08
North	81.27	1,246,864 81	15,342 25
Totals	492.37	7,174,492 02	14,571 34

BONDED SEWER DEBT.

Sewer Bonds outstanding December 31, 1888, bearing 7 per cent. interest and maturing as follows :

July 1, 1892	$490,000 00
July 1, 1894	785,000 00
July 1, 1895	13,000 00
July 1, 1890, bearing 4½ per cent. interest	489,500 00
July 1, 1904, bearing 4 per cent. interest	458,000 00
July 1, 1908, bearing 4 per cent. interest	387,000 00
Total sewerage debt	$2,622,500 00

RIVER IMPROVEMENT BONDS.

Bonds outstanding December 31, 1888, bearing 7 per cent. interest and maturing as follows:

July 1, 1890	$250,000 00	
July 1, 1892	249,000 00	
July 1, 1893	500,000 00	
July 1, 1894	346,000 00	
July 1, 1895	1,263,000 00	
Total River Improvement debt		$2,608,000 00
Grand total outstanding		$5,230,500 00

Total interest paid on sewerage bonds to January 1, 1889	$4,731,261 00
Total amount paid as interest on river improvement bonds to January 1, 1889	$3,762,180 00
The whole amount paid as interest on water, sewerage and river improvement bonds combined	$14,948,135 75

THE RIVER.

Concerning my observations of last year, I am still of the opinion that the Chicago River does not receive at the hands of your Honorable Body the attention its importance demands. Systematic and continued dredging should be provided for and insisted upon.

During the year the plan of requiring all dredging to be done under permit, issued by this Department, was introduced and successfully carried out. It had been the custom, heretofore, to dredge indiscriminately, without the knowledge of the city authorities, as to when and where. In many cases the dredgings were taken from one place only to be dropped in and along the river, at other places. Under the plan adopted, before any dredging can be done, it is required that a permit shall be taken out, stating when and for whom said work is to be done. The city then details in each case an inspector at the expense of the party doing the work. It is the inspector's duty to see that the dredgings are not again dropped into the river, but carried out and into the lake. The results have proved quite satisfactory.

Would it not be well to see if a proper dredging of the river could be provided for by special assessments on dock property?

The importance of the river to the City of Chicago and her interests, suggests your being liberal in your views looking toward its improvement.

RIVER LIGHTING.

A season's test of the lighting of the river by electricity has abundantly proved the wisdom of the initial step. The plant should be enlarged and the circuits extended, making it more pleasant and as easy to navigate the river at night as by daylight, and lessening the annoyance of bridge detention during business hours.

STREET LIGHTING.

The city is lighted by gas lamps, gasoline lamps and by electric arc-lights. The several gas companies have not kept pace with the growth of the city in laying mains, and consequently the erection of gasoline lamps has been large in the districts not yet occupied by gas companies. The expense is great, and it would be economy on the part of the city to do this work itself, rather than by contract, as at present. I am of the opinion that from $15,000 to $20,000 per annum can be saved, if the city will take hold of this matter.

The lighting by electricity, recently introduced, has proved a decided success, and marks a new era in street lighting. Demands are being made from all parts of the city for its introduction and use. In its further extension I would recommend the placing of a light at the entrance to each alley, and midway in the alley where the blocks are over three hundred feet in length.

For the full details of the cost etc., I refer to the report of Prof. Barrett.

BRIDGES AND VIADUCTS.

The expense for the maintenance of bridges and viaducts for the past year has been quite large, owing to the fact that in previous years but little had been done in this respect, even the ordinary wear and tear repairs having been neglected. It was necessary for public safety to at once put all of these in proper condition.

The cost of maintaining these structures for the year was as follows:

For general repairs of bridges and viaducts	$115,706 90
Of this amount there was received for labor and material, and from vessels for damages to bridges	1,783 03
Total cost to city for repairs of bridges and viaducts	$113,923 87

The past year has been unparalleled in the history of the city in the building of new viaducts and bridges. It has been the policy of his Honor, Mayor Roche, to provide for the accommodation of the people adequate and much needed facilities in this direction. Early in the year he formulated plans for viaducts to be provided for at the expense of the various railroad companies of the city. By judicious management he secured the willing co-operation of the corporations, resulting in the erection of such works at a cost to the several railroads interested, of nearly *one million dollars*. This work is to be continued during 1889, plans having been already formulated looking toward the erection of about ten such structures. The Mayor has arranged with the roads over whose tracks the work is to be done for an early conference to settle details.

For cost and description of work done you are referred to the report of the City Engineer.

NORTH BRANCH RIVER PUMPING WORKS.

The past year 5,606,704,120 cubic feet of water were forced from the lake into the river at the Fullerton avenue works, at a cost for operating and maintenance of $20,946.34; $3,250.00 being chargeable to 1887, for fuel oil.

SOUTH BRANCH RIVER PUMPING WORKS.

These works have been in constant use during the year, excepting the time required in making some trifling repairs, or on account of excessive high water in the river. The total cost of operating and maintaining them was $39,618.91.

OGDEN DAM.

The dam constructed in 1886 remains in good condition at this point, but in May last a channel was cut through the bank at a point south of this structure. A temporary dam was immediately built, and later in the season a permanent one was substituted, which will no doubt afford ample protection.

The amount expended for maintenance during the year was $579.19.

PARKS.

The strictly city parks are few in number and area, yet are of sufficient importance to demand your thoughtful attention and liberal consideration. Lake Front park could, by a fair allowance of money, properly expended, be made to minister to the health and social enjoyment of thousands of our citizens who seldom have the leisure to visit our grand outlying park system.

SEWERAGE.

The question of sewerage is a most important one. It is demanding public attention to such a degree as warrants the belief that within a short time a plan or plans will be evolved and put into execution, which will relieve the anxiety forced upon us by the continued growth of population. This growth and the increase of wealth will justify the large expense necessary.

STREETS.

The Department having in charge the improvement and maintenance of our streets meets with constant criticism, much of which is not merited. Subject to annoyances and obstacles that seem insurmountable, it is impossible to accomplish satisfactorily all that is desired in the work.

The constant tearing up of street pavements and their improper and hasty re-laying, render it impossible to keep them in a good condition. Subject to the needs or wants of gas, telephone, electric and subway corporations and private citizens, it is one continual round of tearing up and repaving, and yet unavoidable. It is to be hoped that at no distant day this costly and disagreeable annoyance will be avoided by the construction of extensive underground conduits by the city. In these conduits can be placed wires, pipes, etc. I hope this may come about by utilizing the space under the sidewalks.

During the past year attempted combinations for advanced prices have been foiled, and competition has been spirited, resulting in the letting of contracts at low prices. The supervision of the work has been vigilant and competent.

As to the kind of pavement laid, cedar block largely predominates. For the central portion of the city, granite has been adopted, but numerous complaints have been made by occupants and owners of business blocks, regarding the noise that accompanies its use. As to its durability, there is no question, but when the wear and tear upon vehicles and horseflesh, and the attendant noise are considered, its economy is questioned. A selected cedar block, laid upon a concrete or crushed stone foundation, is perhaps the best pavement offered to the public, being durable, noiseless and economical.

In the matter of street cleaning, the Department meets with many and varied obstacles. The citizens are unmindful of their duty; stores are swept out at all hours of the day; the streets are made a common dumping ground for refuse material of all kinds, and proper receptacles for garbage and ashes are not provided by law. Very often after a thorough cleaning, dirt, dust, ashes and materials are carted through the city in wagons not properly constructed for such use, resulting in droppings being scattered on and along the newly cleaned pavement.

Notwithstanding these drawbacks, the officials in charge of this service, by diligence and intelligent supervision, have, in the judgment of those citizens who are capable of forming an estimate of the work to be done, kept our thoroughfares in a satisfactory condition.

The appropriations for this work should be largely increased, enabling us to extend our system of cleaning to the newly paved streets.

STREETS.

During the year streets were improved as follows :

Paved with cedar blocks	47.15 miles.
Paved with macadam	3.67 miles.
Paved with granite block	3.04 miles.
Total number of miles improved	53.86 miles.
In addition to the above, streets were planked for a distance of	.47 miles.
Making a total of	54.33 miles.

DIVISION.	Square Yards.	Lineal Feet of Roadway.	Miles of Pavement Laid in 1888.			Total Cost.			Average Cost per Mile.	Total Miles of Pavement Laid in the City.			Miles of Pavement relaid in 1888.
			Amount under Assessment.	Amount of Private Contracts.	Total.	Amount of Contracts.	Cost of Superintendence, Assessment etc.	Grand Total Cost.		Amount Previously Laid.	New Pavement added in 1888.	Total Pavement in the City.	
West	596,688.97	156,331.89	29.66	.10	29.76	$854,951 39	$34,198 06	$889,149 45	$29,978 07	162.91	24.37	187.28	5.39
South	217,535.78	59,918.07	11.29	.05	11 34	357,672 66	14,302 91	371,875 57	32,929 63	90.46	8.45	98.91	2.89
North	213,856.34	63,798.38	11.84	.24	12.08	268,562 19	10,742 49	279,304 68	23,589 92	53.48	7.71	61.19	4.37
Viaducts and appro'ches	21,120.46	6,076.33	1.15	......	1.15	......	......	......	......	......	1.15	1.15	......
Total	1,049,201.55	286,124.67	52.79	.39	54.33	$1,481,086 24	$59,243 46	$1,540,329 70	$29,178 43	306.85	41.68	348.53	12.65

KIND OF PAVEMENT IN USE IN EACH DIVISION, DEC. 31, 1888.

DIVISIONS.	Wood Block.	Macadam.	Stone.	Block Asphalt.	Sheet Asphalt.	Graveling.	Cinders.	Oak Plank.	Total Miles.
West	153.38	20.88	.80	......	.82	2.64	8.29	.47	187.28
South	65.68	9.73	14.32	4.11	.33	4.38	.36	....	98.91
North	55.60	1.19	.53	......	2.19	.42	1.26	. ..	61.19
Viaducts & Approaches	1.15	......	......	......	.....	......	......	. ..	1.15
Total Miles	275.81	31.80	15.65	4.11	3.34	7.44	9.91	.47	348.53

(Repaving Deducted.)

The foregoing tables include 12.65 miles of streets repaved during the year, which, deducted from the 361.18 miles down, leaves a total of 348.53 miles of paved streets in the city.

Repaving and repairs have been made on improved streets in each division of the city, as follows:

South Division	22,879 square yards.
West Division	46,579 square yards.
North Division	11,193 square yards.
Total	80,651 square yards.
Amount of repairs by corporations	16,634 square yards.
Total in city	97,285 square yards.

STREET RAILWAYS.

During the year the Street Railway Companies paved the portion of the various streets occupied by their tracks, as shown in the following table:

CORPORATIONS.	Boulder Stone, Square Yards.	Granite Blocks, Square Yards.	Wooden Blocks, Square Yards.	Bricks, Square Yards.	Total Square Yards.
Chicago City Railway Co....	......	12,000	......	......	12,000
North Chicago St. R. R. Co..	7,843^{1}	5,576^{2}	8,652^{5}	......	22,071^{8}
Chicago Passenger R'y Co...	13,446^{3}	......	18,152^{8}	......	31,599^{2}
West Chicago St. R. R. Co...	7,583	1,919	18,623	1,634	29,759
Totals..........	28,872^{4}	19,495^{2}	45,428^{4}	1,634	95,430

The miles of streets occupied and operated by the several railroad companies are:

North Chicago Street R. R. Co........	27.11 miles
Chicago City Railway Co.............	33.48 miles
West Chicago Street Railroad Co......	49.23 miles
Chicago Passenger Railway Co........	13.09 miles
Total.........................	122.91 miles

SIDEWALKS.

The following table shows the various kinds of material used in the construction and repair of sidewalks:

DIVISION.	MATERIAL.			Total Miles.	Sidewalks Repaired.	Total Work.
	Wood.	Stone.	Concrete.			
South....	23.36	3.79	0.18	27.33	20.76	48.09
West.....	92.42	6.85	0.25	99.52	99.47	198.99
North....	17.85	2.30	0.23	20.38	3.50	23.88
	133.63	12.94	0.66	147.23	123.73	270.96

There were constructed 37.13 miles of sidewalk upon streets where walks had never been previously laid. About 19.64 miles of the same, varying in width from four to six feet, were built by the Department, and the remainder by contractors under special agreements with property owners.

The total number of miles of sidewalk laid in the city, including those constructed on highways controlled by the Park Commissioners, is as follows:

	MATERIAL.			Total Miles.
	Wood.	Stone.	Concrete.	
City.....................	1,028.72	99.55	16.34	1,144.61
Boulevards to West Parks..	....	9.79	....	9.79
Boulevards to South Parks..	....	10.63	....	10.63
Boulevards to Lincoln Park	....	1.75	....	1.75
Total miles.....	1,028.72	121.72	16.34	1,168.78

Wood sidewalks replaced by stone and concrete....... 5.67

Making the total number of miles in the city..........1,161.11

STREET CLEANING.

The past year, 3,051.34 miles of improved streets were swept and cleaned, under a contract between the city and Jno. S. Cooper, for the sum of $23.99 per mile, the total cost being $73,201.64. The work was commenced on April 2, and discontinued on November 27, 1888. Of improved streets, 2,138.11 miles were swept, under contract, by Jno. S. Cooper, at $7.00 per mile, the total cost being $14,966.77. Work was commenced on April 2, and discontinued on December 31, 1888. Total amount expended under contracts, $88,168.41.

STREET LAMPS.

DIVISION.	Gas Lamps.			Oil Lamps.				
	Number in use in 1887.	Number added in 1888.	Total Number of Lamps.	Number in use in 1887.	Number added in 1888.	Total Number of Lamps.	Less Number replaced by Gas Lamps.	Total.
West.........	10,002	1,499	11,501	2,201	1,831	4,032	507	3,525
South.......	4,602	368	4,970	1,214	294	1,508	130	1,348
North........	2,924	209	3,133	603	58	662	91	571
Totals.......	17,528	2,076	19,604	4,018	2,183	6,202	728	5,474

Total number of street lamps in the city, 25,078.

EXPENSE OF LIGHTING.

COMPANIES.	No. of Cubic Feet Consumed.	Amount.	Repairs, New Service etc.	Lighting, Cleaning and Extinguishing.	Thawing and Alcohol.	Total.
P. G. L. & C. Co....	180,767,754	$180,767 75	$20,120 35	$55,667 27	$8,735 40	$265,290 77
C. G. L. & C. Co.....	114,458,570	114,658 57	12,494 38	41,345 64	3,719 30	142,026 85

Total cost of lighting and maintaining gas lamps,		$437,312 62
Wheeler Reflector Co., for material and lighting oil lamps........		85,688 77
For lamp posts, repairing and making lamps, including glass........		19,473 79
		$542,475 18
Less amount received from Special Assessment Department....	$6,228 00	
Less from collections...	616 73	
		6,844 73
Total cost of lighting the city.......		$535,630 45

The contract for furnishing the city with gas per one thousand cubic feet was:

P. G. L. & C. Co., Jan. 1 to Dec. 31, 1888....	$1 00
C. G. L. & C. Co., Jan. 1 to Dec. 31, 1887....	1 00

The total cost for gas per lamp was as follows:

WEST DIVISION.

For gas consumed per lamp per annum	$16 81
For lighting and maintenance by the Co.	7 86
For new lamps and repairs by the city	94
Total	$25 61

NORTH AND SOUTH DIVISIONS.

For gas consumed per lamp per annum	$14 65
For lighting and maintenance by the Co.	7 37
For new lamps and repairs by the city	88
Total	$22 90
Cost of maintaining each oil lamp, per month, as per contract	$18 50

PARKS.

The cost of maintaining the various parks under the control of this Department during the past year was as follows:

Lake Park	$2,601 85
Ellis Park	795 71
Douglas Monument Square	663 84
Aldine Square	790 05
Campbell Park	231 10
Union Square	15 59
Washington Square	1,545 48
Dearborn Park	42 50
Total expenditure	$6,686 12

CITY HALL BUILDING.

The amount expended in the completion of the building during the past year	$ 22,458 48
Total amount previously expended	1,692,979 22
Total expenditure to Dec. 31, 1888	$1,715,437 70
Amount due on uncompleted contracts January 1, 1889	$144 00

The report of the Commissioner of Buildings shows that, during the past year, 4,958 buildings were erected, extending over an aggregate frontage of 116,419 lineal feet, or over 22.03 miles, at a cost of over $20,360,800, the same being distributed in the divisions of the city as follows:

DIVISION.	NUMBER BUILDINGS ERECTED.	AGGREGATE FRONTAGE IN FEET.	FRONTAGE IN MILES.	ESTIMATED VALUE.
North	510	13,024	2.46+	$2,524,250 00
South	1,142	29,124	5.51+	7,215,400 00
West	3,306	74,271	14.06+	10,621,150 00
Totals	4,958	116,419	22.03+	$20,360,800 00

COMPARISON WITH FIVE PREVIOUS YEARS.

YEAR.	NUMBER BUILDINGS ERECTED.	AGGREGATE FRONTAGE IN FEET.	FRONTAGE IN MILES.	ESTIMATED VALUE.
1883...........	4,086	85,588	16.2	$17,500,000 00
1884...........	4,169	98,782	18.6	20,689,600 00
1885...........	4,638	108,850	20.6	19,624,100 00
1886...........	4,664	112,302	21.2	21,324,400 00
1887...........	4,833	115,506	21.8	19,778,100 00
1888...........	4,958	116,419	22.0	20,360,800 00
Totals for 6 yrs.	27,348	637,447	120.4	$119,277,000 00

There were moved under the supervision of the Department of Public Works, 1,207 frame and ninety-nine brick buildings, a total of 1,306. They varied from one to three stories high, and extended over a surface of 26,131 lineal feet, or nearly five miles of frontage.

PAY DEPARTMENT.

Soon after the induction into office of the present administration, a radical change in the manner of paying employes of the Department was adopted. The old system was annoying and wasteful of time and patience, as every employe had to visit the City Hall to draw his pay, the practice being to have different departments paid on succeeding days. Lines of men would form from the paying window of the City

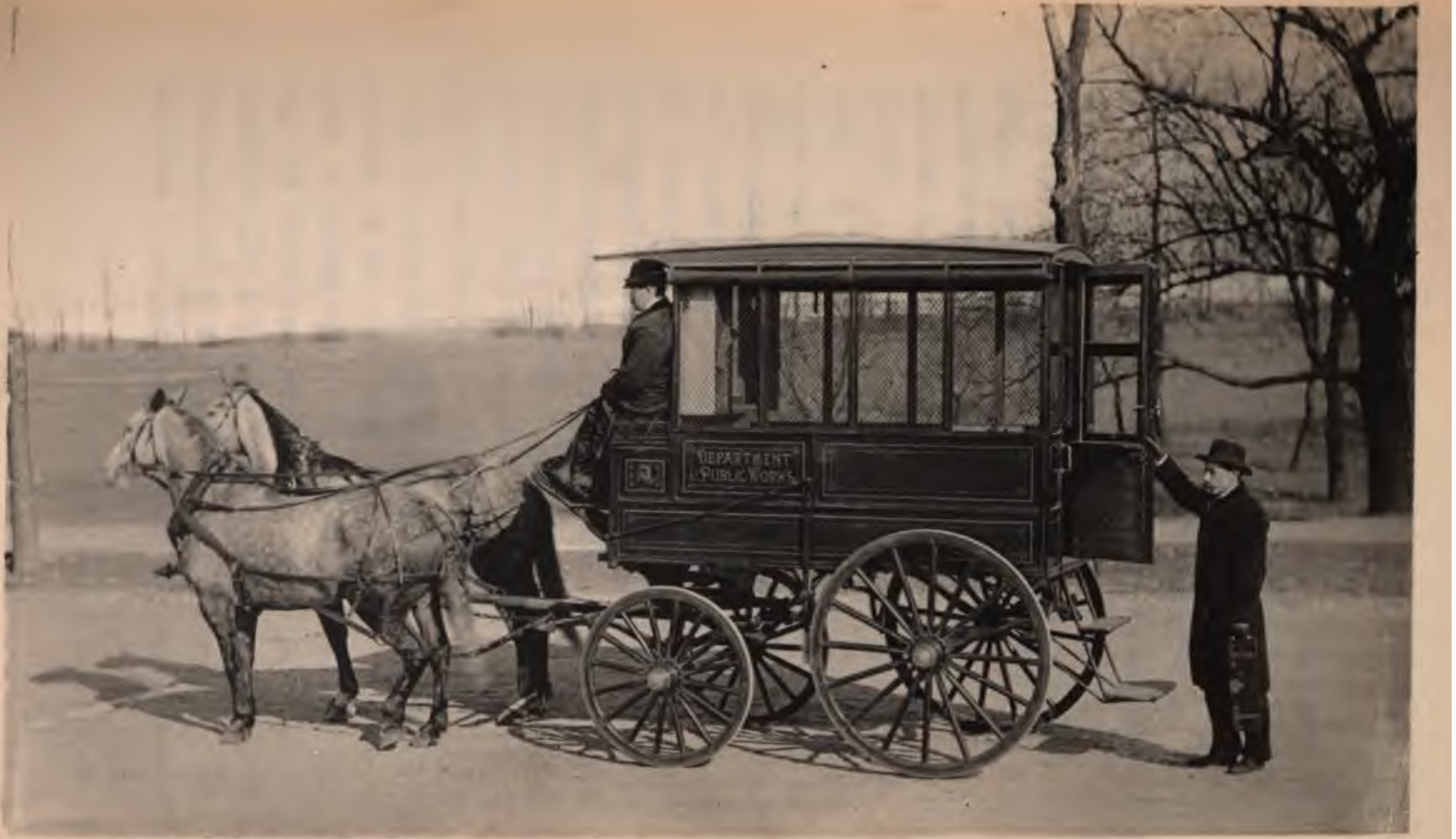


PHOTO-GRAVURE—M. UMBDENSTOCK & CO., CHICAGO.

Treasurer's office, out into and along the corridor, interrupting free access to adjacent rooms and demoralizing the office forces. It was found that the custom cost the city, annually, in time lost and paid for, nearly $30,000. This fact led to the adoption of the present system.

A Pay Wagon was built by the Department—a strong, well arranged vehicle. By following the course of the wagon on one of its trips an insight into the workings of the system can be had. On pay-day, twenty or more stops may have to be made. A schedule of these stops is carefully drawn up the day previous. The pay roll is made out, containing the name of every employe, his number and the amount of his pay, his number being written on the envelope containing the money, and cards with corresponding numbers being given the foreman for proper disposition among the men. The envelopes are sealed and placed in drawers in a combination lock safe. There is one drawer for each gang of men and but one drawer at a time is taken from the safe.

At 6 A. M. in the morning of pay day, the wagon is brought to the City Hall by a Police department team, in charge of a trusty driver. The safe containing the funds is placed under the supervision of Assistant City Treasurer Mamer and Paymaster John Freeman, and is escorted by two policemen. The schedule is so carefully prepared that each foreman knows almost to the minute when the wagon will arrive and his men are all in line, tickets in hand. It takes but a short time to receive the tickets, pass out the corresponding envelopes and start for the next stopping place, and so on till all are paid.

To pay firemen, policemen and laborers now takes three half days. The men do not have to stand in line for hours, the public are not annoyed by the crowds in waiting and the city saves over $29,000 per year.

CONCLUSION.

In submitting this; my Second Annual Report, I earnestly request that you carefully read the detailed reports which follow, and thus gain much information regarding the marvelous growth and improvement of the city during the past year.

Respectfully yours,

GEO. B. SWIFT,

Commissioner.

MISCELLANEOUS DATA.

Chicago covers an area of nearly thirty-seven square miles, or...	23,680 acres
Population of the city...........	875,000
Assessed valuation of real and personal property...............	$160,641,727 00
Number of public school buildings	98

Average number of children attending school	84,902
Number of teachers	1,645
Number of churches	325
Number of railroads entering the city	66
Number of street car lines	4
Number of miles of street railroad track laid	123
Number of police station buildings	21
Number of men employed on the force	1,255
Number of fire engine houses	49
Number of fire engines	48
Number of fire boats	2
Number of hook and ladder trucks	14
Number of chemical fire engines	12
Number of firemen employed	625
Number of acres in public parks	789
Number of miles of drives in parks and boulevards	57¾
Number of miles of walks in parks	20
Number of miles of streets in city	663.4
Miles of paved streets	348.58
Miles of sidewalks	1,161.11
Miles of main sewers	492.37
Miles of water mains	677.10
Miles of water tunnels	10

Number of river traffic tunnels...	2
Number of bridges over the river.	36
Number of bridges over the canal	3
Number of viaducts over railroad tracks	33
Number of street lamps in the city	25,078
Number of miles river frontage (both sides)	41
Number of vessels arriving during the year	10,158
Number of vessels departing during the year................	10,308
Representing a tonnage of.......	8,124,985
Number feet of lumber received..	2,012,069,000
Number bushels of grain received	150,194,177
Number head of hogs, cattle and sheep received..............	9,022,622
Bank clearings for the year	$3,163,774,462 68
Post Office receipts from stamps, cards, envelopes and money orders.......................	$12,473,974 02
Received from postal accounts...	$2,634,818 62
Number pieces of mail matter handled	312,999,342
Number of clerks employed......	565
Number of carriers employed....	470
Number of horses in use	18

REPORT

OF THE

Bureau of Engineering

CITY OF CHICAGO.

ENGINEER'S REPORT.

CHICAGO, January 25, 1889.

HON. GEO. B. SWIFT,
Commissioner of Public Works.

DEAR SIR:—I submit herewith a report of the operations of the Bureau of Engineering for the year 1888, being the Thirteenth Annual Report under the Department of Public Works.

WATER PIPE EXTENSION.

The amount of water pipe laid during the year 1888 is nearly the same as last; a fraction over 44.5 miles.

The net increase to the system is somewhat smaller, more of the old three and four inch pipe having been replaced than in 1887, the total for the year being 29,950 feet.

The demand for pipe on streets where sufficient revenue would be derived to warrant us in laying it has been so great, that we have been compelled to refuse to lay a great amount in front of vacant real estate at the expense of the property owners. The amount laid at their expense during the year, the cost of which will be refunded when sufficient revenue is derived therefrom, is 11,043 feet.

The total amount of pipe of all sizes in use by the city on December 31, 1888, was $677\frac{404}{5280}$ miles.

We have in service in connection with the system 5,099 stop valves, 6,367 fire hydrants and eighty-three fire cisterns.

Water mains have been lowered in the following streets:

Lake, from Western avenue to Seymour.

Burling, from Webster avenue to Belden avenue.

Halsted, from Belden avenue to Fullerton avenue.

Ohio, from Wood to Robey.

Samuel, from Chicago avenue to Clarinda.

Bickerdike, from Indiana to Ohio.

Center, from Halsted to Sedgwick.

Thirty-seventh, from Cottage Grove avenue to Ellis avenue.

The following tabulated statement shows in detail the work done in water pipe extension during the year:

NORTH DIVISION.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Belden avenue	Lincoln avenue	Westward	108	6
Belden avenue	Seminary avenue	Eastward	437	6
Belden avenue	Southport avenue	Racine avenue	1,247	6
Belden avenue	Southport avenue	Perry avenue	600	6
Burling	North avenue	Center	2,625	6
Clark	Fullerton avenue	North crossing	16	8
Erie	St. Clair	Eastward	631	6
Franklin	Eugenie	Florimond	248	4
Franklin	North avenue	Sigel	1,564	6
Fullerton avenue	Clark	Larrabee	950	8
Fullerton avenue	Seminary avenue	Ward	1,660	8
Fullerton avenue	Lincoln avenue	Orchard	563	8
Fullerton avenue	Sheffield avenue	Osgood	384	8
Halsted	Division	Rees	997	6
Halsted	Fullerton avenue	Belden avenue	587	16
Herndon	Belden avenue	North crossing	24	6
Herndon	Fullerton avenue	South crossing	36	6
Howe	Willow	Center	1,562	6
Hudson avenue	Sigel	North avenue	1,608	6
Indiana	Rush	Crossing	71	6
Jay	Fullerton avenue	South crossing	8	6
Kemper place	Larrabee	Westward	266	6
Larrabee	Fullerton avenue	North crossing	13	8
Lewis	Belden avenue	South crossing	40	6
Market	Carroll avenue	Southward	76	6
Ohio	Rush	Crossing	70	6
Osgood	Webster avenue	Northward	1,000	6
Osgood	Fullerton avenue	Southward	313	6
Perry avenue	Fullerton avenue	South crossing	25	8
Racine avenue	Fullerton avenue	South crossing	14	8
Ritchie place	Banks	Southward	316	6
Rush	Illinois	Ohio	594	8
Seminary avenue	Center	Crossing	62	6
Sheffield avenue	Belden avenue	Southward	400	8
Sheffield avenue	Fullerton avenue	South crossing	12	8
Vedder	Halsted	Westward	220	6
Vine	Willow	North avenue	1,023	6
Weed	Halsted	Westward	270	6
Wieland	North avenue	Schiller	1,250	6
	Total		21,590	
	Add branch pipe for hydrants		52	4
	Add branch pipe for hydrants		715	6
	Total feet laid in North Division		22,657	

SOUTH DIVISION.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Attica	Laurel	Eastward	40	6
Auburn	Thirty-first	Southward	300	6
Bonfield	300 feet north of Thirty-first.	Northward	218	6
Butler	Twenty-fourth	Southward	45	6
Butler	Twenty-sixth	Napoleon place	950	6
Butler	Crossings on north and south	sides Thirty-fifth street viaduct	120	6
Butterfield	Thirty-third	Thirty fourth	675	6
Calumet avenue.	Egan avenue	Northward	300	6
Dashiel	Thirty-second	Southward	256	6
Iron	Douglas avenue	Thirty-fourth	750	6
Jackson	Fifth avenue	Market	800	8
Laurel	Douglas avenue	Southward	2,507	12
*Lincoln	Thirty-sixth	Thirty-eighth	1,345	8
Lowe avenue	Thirty first	Southward	350	8
Lundy	Douglas avenue	Northward	30	6
Marshfieldavenue	Douglas avenue	Thirty-fourth	608	4
Michigan avenue	River	South Water	530	8
Parnell avenue	355 feet north of Douglas avenue	Southward	180	6
Saratoga	Thirty-third	Thirty-fourth	637	8
Shields avenue	North and south lines Thirty-	fifth street viaduct	120	6
Thirtieth	Emerald avenue	East crossing	70	6
Thirty-second	Emerald avenue	East crossing	40	6
Thirty-second	312 feet east of Laurel	Eastward	124	6
Thirty-third	Emerald avenue	Crossing	70	8
Thirty-third	Saratoga	Yorktown	333	8
Thirty-third	Wallace	Crossing	78	6
Thirty third	Champlain avenue	Saratoga	336	8
Thirty fourth	State	Dearborn	270	6
Thirty-fourth	Ashland avenue	Crossing	72	8
Thirty-fourth	Emerald avenue	Crossing	64	6
Thirty-fifth	Laurel	East crossing	48	6
Thirty-fifth court.	Gage	Westward	150	6
Thirty-sixth	Ashland avenue	Crossing	70	6
Thirty sixth	Tucker	Laurel	710	6
Thirty-sixth	Dearborn	Butterfield	295	6
Thirty sixth	State	Dearborn	250	6
Thirty sixth	Laurel	East crossing	48	6
*Thirty-sixth	Robey	Lincoln	655	6
Thirty-seventh	Ashland avenue	Crossing	73	8
Thirty-seventh	Laurel	East crossing	48	8
Thirty-seventh	Lincoln	Wood	660	8
Thirty-seventhct.	Tucker	Gage	496	6
Thirty-seventhct.	Laurel	East crossing	48	6
Thirty-eighth	Laurel	East crossing	75	8
Thirty-eighth	Wallace	West crossing	30	6
Thirty-eighth	Ashland avenue	Crossing	72	8
Thirty-eighth	Emerald avenue	Crossing	64	6
Thirty-eighth court	Ashland avenue	Crossing	72	6

*Expense of property owners.

SOUTH DIVISION—CONTINUED.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Thirty-eighth court...	Laurel..............	Crossing...	48	6
Tucker..........	Thirty-sixth..	Thirty seventh..	380	6
Twelfth.........	Clark....	Westward...........	760	6
Twenty-eighth ..	Emerald avenue......	Crossing............	70	6
Twenty-ninth ...	Emerald avenue......	Crossing............	30	6
*Vermont.......	Winchester avenue...	Thirty-seventh.......	635	6
Vermont........	Winchester avenue..	Douglas avenue crossing....	48	6
Yorktown.......	Thirty-third	Thirty-fourth	639	6
	Total..................		18,642	
	Add branch pipe for hydrants..............		143	4
	Add branch pipe for hydrants..............		429	6
	Total feet laid in South Division........		19,214	

*Expense of property owners.

WEST DIVISION.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Alley between May and Center avenue	Austin avenue	Kinzie	392	6
Adams	Sacramento avenue	Crossing	41	6
Adams	Kedzie avenue	Crossing	30	6
Albany avenue	Twelfth	Crossing	38	6
Albany avenue	Washington boulevard	Lake	395	6
*Albany avenue	Polk	Taylor	664	6
Albany avenue	Central Park boulev'd.	Northward	342	6
Albany avenue	Lake	Southward	75	6
Albany avenue	Twenty-sixth	Northward	1,032	8
Ambrose	Western avenue	East crossing	36	6
Armitage avenue	California avenue	Eastward	560	12
Armitage avenue	Leavitt	Hoyne avenue	660	4
Armitage avenue	Robey	Girard	961	4
Armitage avenue	Milwaukee avenue	Leavitt	1,600	12
Armitage avenue	California avenue	Kedzie avenue	2,569	12
Armitage court	Clarkson avenue	Kedzie avenue	420	4
Ashland avenue	Fulton	Carroll avenue (viaduct).	604	6
Ashland avenue	Fulton	Carroll avenue (viaduct).	154	8
Ashland avenue	Kinzie	Austin avenue (viaduct).	760	6
Attrill	Milwaukee avenue	State	470	4
Augusta	Hamlin avenue	Eastward	335	8
*Augusta	Robey	Westward	666	8
Avers avenue	Division	Northward	300	6
Barclay	Cortez	Thomas	730	6
Basil avenue	North avenue	Bloomingdale road	1,270	6
Berlin	Myrtle avenue	Cromwell	504	6
Berlin	Western avenue	Eastward	650	6
Bickerdike	Ohio	Erie	240	6
Bickerdike	Huron	Chicago avenue	550	6
Binze	Elston avenue	West crossing	24	6
Birch	Kendall	East crossing	42	6
Bloomingdale road	Basil avenue	West crossing	97	6
Bloomingdale road	Mitchell	Norman avenue	312	6
Bloomingdale road	Western avenue	Maplewood avenue	998	6
Bonney avenue	Twenty-second	Southward	480	6
Bonney avenue	Twenty-eighth	North crossing	25	6
Bonney avenue	Ogden avenue	Twenty-second	490	6
Bonney avenue	Twenty-fifth	Twenty-sixth	518	6
*Bonney avenue	Twenty-seventh	Twenty-eighth	672	6
Boulevard, East Side	North avenue	Northward	1,010	6
Boulevard, West Side	North avenue	Bloomingdale avenue	1,232	6
Boulevard, East Side	Armitage avenue	Southward	122	6
Boulevard, West Side	Armitage avenue	Crossing	90	6
Bradley	Noble	Holt	640	6
Bremen	Western avenue	Oakley avenue	650	6
Bremen	Myrtle	Cromwell	506	4
Broome	Ohio	Northward	41	6

*Expense of property owners.

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Bryson	California avenue	Eastward	1,100	8
Bryson	Shober	Westward	215	8
*Burnett	Robey	Hoyne avenue	655	6
Byron	California avenue	West crossing	35	6
California avenue	Madison	Washington boulevard	514	8
California avenue	Twenty-second	Twenty-first	678	8
California avenue	Washington boulevard	Lake	457	8
California avenue	Fulton	Southward	180	8
California avenue	Armitage avenue	Northward	1,272	12
California avenue	326 ft. north of Fulton	Northward	150	8
California avenue	Twelfth	Harvard	1,486	12
California avenue	Milwaukee avenue	Fullerton avenue	690	12
Campbell avenue	Twelfth	Crossings	148	6
Campbell avenue	Taylor	Harvard	335	6
Canal	Jackson	Crossing	58	6
Canal	Lake	Randolph	400	8
Carroll avenue	Ashland avenue	Eastward (viaduct)	564	6
Carroll avenue	Kedzie avenue	Crossing	90	6
Central Park ave.	Ogden avenue	Eighteenth	1,000	8
Central Park bd.	Albany avenue	Eastward	450	6
Chancey	Point	Westward	221	4
Chase court	Blue Island avenue	North crossing	45	6
Chase	Fry	Chicago avenue	300	4
Cherry avenue	Perry avenue	Powell avenue	575	4
Chicago avenue	Washtenaw avenue	Eastward	670	6
Chicago avenue	Springfield avenue	Westward	342	12
Chicago avenue	Lawndale avenue	Eastward	334	12
Church court	Center avenue	Aberdeen	692	4
Clara place	Western avenue	Perry avenue	1,066	6
Clarinda	Rumsey	Crossing	74	6
Clarinda	Samuel	Crossing	42	6
Clarkson avenue	Armitage avenue	Bloomingdale avenue	1,350	6
Clarkson avenue	Armitage avenue	Boulevard	1,123	6
Colorado avenue	Troy	St. Louis avenue	2,231	8
Colorado avenue	California avenue	Monroe	900	8
Congress	Sacramento avenue	Eastward	148	6
Congress	Kedzie avenue	Spaulding	707	6
Cornelia	Rumsey	Crossing	72	6
Cornelia	Point	Milwaukee avenue	938	6
Coulter	Hoyne avenue	Eastward	560	6
Cortland court	Clarkson avenue	Kedzie avenue	420	4
Cortland	Clarkson avenue	Kedzie avenue	420	8
Cortland	Wilmot avenue	Eastward	363	6
Cromwell	Fullerton avenue	Milwaukee avenue	1,024	6
Cypress	Twelfth	Northward	233	6
Dania avenue	Bloomingdale avenue	Southward	50	6
Davis	Division	Crossing	52	6
Davis	Hirsch	Northward	250	6

*Expense of property owners.

WEST DIVISION—Continued.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Dickens avenue	California avenue	Crossing	35	6
Division	Hamlin avenue	Westward	346	12
Division	Rockwell	Seymour	620	8
Dudley	Chicago avenue	Iowa	600	6
Dudley	Armitage avenue	Crossing	57	6
Dudley	Thomas	Northward	300	6
Edgar	Wabansia avenue	Northward	270	6
Eighteenth	St. Louis avenue	Crossing	30	8
Eighteenth	Lincoln	Robey	717	6
Eighteenth	Western avenue	Crossing	90	6
Eighteenth	Washtenaw avenue	Westward	132	6
Eleventh	Aberdeen	May	236	6
Elizabeth	Ohio	Erie	250	6
Elston avenue	Snow	Webster avenue	3,100	8
Emily	Rumsey	Crossing	72	6
Emily	Samuel	Crossing	43	6
Erie	Western avenue	Seymour	644	6
Fairfield avenue	Harvard	Northward	70	6
Fay	Pratt	Crossing	45	6
Fifteenth	Western avenue	Crossing	81	6
Fourteenth	Hoyne avenue	Crossing	36	6
Francisco	Division	Thomas	644	8
Francisco	Colorado avenue	Monroe	123	6
Francisco	Wilcox avenue	Crossing	78	6
Francisco	Adams	Crossing	70	6
Francisco	Linwood	Southward	400	8
Frances place	California avenue	Crossing	50	6
Frankfort	Leavitt	Westward	665	6
Fullerton avenue	Elston avenue	Eastward	654	6
Fullerton avenue	Elston avenue	Westward	40	8
Fullerton avenue	Oakley avenue	Leavitt	880	8
Fullerton avenue	Western avenue	Cromwell	2,200	8
*Fulton	Kedzie avenue	Westward	935	8
Fulton	Kedzie avenue	Crossing	50	8
Fulton	Ashland avenue	Crossing	41	6
Gardner	Halsted	Crossing	56	6
Gloy	Elston avenue	Crossing	24	6
Grand avenue	Western avenue	Crossing	40	6
Grand avenue	Washtenaw avenue	Wright place	428	6
Grand avenue	Hamlin avenue	Westward	210	8
Greenwood	Western avenue	Eastward	700	6
Gurley	May	Center avenue	336	6
Hadden	Robey	Hoyne avenue	632	6
Hamlin avenue	Augusta	Northward	1,860	8
Hamlin avenue	Huron	Chicago avenue	671	8
Hamlin avenue	Williams avenue	Southward	133	8
Harding	Chicago avenue	Northward	630	6
Harrison	California avenue	Kedzie avenue	2,730	24

*Expense of property owners.

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Length of Pipe in feet	Size in inches.
Harvard	Campbell avenue	Crossing	41	6
Harvard	Fairfield avenue	Eastward	536	8
Harvard	Francisco	Westward	404	8
Harvard	California avenue	Westward	630	8
Harvard	375 ft. east of Albany avenue	Westward	888	8
Hastings	Leavitt	Crossing	36	6
Hastings	Lincoln	Robey	660	6
Henry	Morgan	Westward	228	4
Henry	Wood	Crossing	40	6
Hinman	Western avenue	Crossing	85	6
*Hinman	Washtenaw avenue	Rockwell	641	6
Hinman	California avenue	Boulevard	850	6
Hirsch	Shober	Oakley	334	6
Hoffman avenue	Fullerton avenue	Crossing	24	6
Homan avenue	Lake	Northward	270	8
Homan avenue	Madison	Jackson	1,340	8
Homan avenue	Twenty-fifth	Twenty-sixth	622	8
Hoyne avenue	Hastings	Fourteenth	332	6
Hoyne avenue	Webster avenue	Northward	350	6
*Hoyne avenue	Division	Augusta	1,256	8
Hoyne avenue	Thirteenth	Crossing	30	6
Hoyne avenue	Division	Crossing	76	8
Hoyne avenue	Twelfth	Southward	136	6
Humboldt	Armitage avenue	Crossing	35	8
Humboldt	Armitage avenue	Crossing south	16	6
Indiana	Crawford avenue	East	275	6
Irving avenue	Thirteenth	Crossing	48	6
Jackson	Troy	Central Park avenue	2,935	8
Jackson	Canal	Clinton (viaduct)	720	6
Jane	Samuel	Crossing	72	6
Jane	Rumsey	Crossing	40	6
Johnson	Eighteenth	Nineteenth	541	6
Johnson	Nineteenth place	Canalport avenue	755	6
Johnson	Nineteenth	Nineteenth place	250	4
Julia court	Stave	Southward	240	4
Kedzie avenue	North avenue	Bloomingdale avenue	1,282	8
Kedzie avenue	Congress	Van Buren	344	12
Kedzie avenue	Warren avenue	Madison	245	12
Kedzie avenue	Washington boulevard	Warren avenue	250	12
Kedzie avenue	Madison	Southward	1,402	12
Kedzie avenue	Twenty-sixth	Southward	670	12
Kedzie avenue	Harrison	Southward	63	12
Kedzie avenue	Central Park boulevard	Southward	267	12
Kosciusko	Leavitt	Eastward	500	6
Kroll	Moore	Southward	375	6
Kuehl Place	Elston avenue	Crossing	24	6
Laughton	Rockwell	Westward	300	6
Lawndale avenue	Twenty-eighth	Twenty-seventh	624	8

*Expense of property owners.

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Lawndale avenue	Williams avenue	Southward	200	6
Leavitt	Blue Island avenue	Crossing	60	8
Leavitt	Kinzie	Austin avenue	270	6
Leavitt	Erie	Huron	280	6
Leavitt	Chicago avenue	Superior	285	6
Leavitt	Twelfth	Crossing	10	6
Leavitt	Hastings	Fourteenth	304	6
Leavitt	Thirteenth	Crossing	48	8
Leavitt	Indiana	Erie	780	6
Lexington	Rockwell	Westward	565	6
Lexington	Francisco	Westward	300	6
Lill avenue	Western avenue	Oakley avenue	490	6
Lill avenue	Station	Westward	250	6
Lincoln	Twenty-first	North	200	6
Lincoln	Twelfth	Southward	136	6
Lincoln	Twelfth	Northward	28	6
Lincoln	Thirteenth	Crossing	30	6
Lincoln	Selden	Taylor	283	6
Lincoln	Twenty-second	Crossing	72	6
Madison	200 ft. west of Rockwell	Westward	657	8
Maplewood ave.	Bloomingdale avenue.	Crossing	50	6
Maplewood ave.	Twelfth	Crossing	70	6
Marshfield ave	Polk	Southward	500	6
Marvin	C., St. L. & P. R. R.	Eastward	146	6
Millard avenue.	Twenty-eighth	Northward	490	6
Millard avenue.	Twenty-sixth	Northward	236	8
Mitchell	North avenue	Bloomingdale avenue.	1,257	6
Monroe	Kedzie avenue	Crossing	75	6
Monroe	Colorado avenue	Westward	184	6
Moore	Western avenue	Westward	114	8
Moore	Leavitt	Oakley avenue	665	6
Moore	Oakley avenue	Westward	200	6
Mozart	Armitage avenue	Palmer avenue	1,530	6
Mozart	Armitage avenue.	Crossing	16	6
Myrtle avenue	Fullerton avenue	Southward	28	8
Nebraska avenue	Armitage avenue	Boulevard	1,123	6
Nebraska avenue	Armitage avenue.	Southward	55	6
Nebraska avenue	Courtland	Bloomingdale avenue.	644	6
Newton	Thomas	Southward	273	4
Newton	Jane	Southward	100	4
Nineteenth	Western avenue.	Westward	65	6
Norman avenue.	North avenue	Bloomingdale avenue.	1,257	6
North avenue	California avenue	Rockwell	1,280	12
North avenue	Rockwell	Maplewood avenue.	250	8
Norton	Gurley	Crossing	15	4
Oakley avenue	Thompson	Hirsch	666	6
Oakley avenue	Division	Northward	740	6
Oakley avenue	Thirteenth	Thirteenth place	336	6

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Oakley avenue	567 feet south of Thirteenth	Southward	50	6
Oakley avenue	Bremer	Rhine	277	6
Ogden avenue	California avenue	St. Louis avenue	4,990	16
Ohio	Wood	Osborn	375	6
Ohio	Ashland avenue	Paulina	602	6
Olive	Twelfth	Crossing	25	4
Owasco	Washtenaw avenue	Westward	306	6
Owasco	California avenue	Crossing	33	6
Park avenue	620 feet east of Homan avenue	Eastward	252	6
Park avenue	Kedzie avenue	Crossing	89	6
Park avenue	Albany avenue	Westward	400	6
Park avenue	California avenue	Crossing	35	6
Parmelee	Western avenue	Eastward	228	6
Paulina	Twenty-second	Crossing	30	6
Paulina	Twelfth	Northward	510	6
Paulina	1,550 ft. so. Blue Island avenue	Southward	450	6
Point	California avenue	Armitage avenue	1,155	6
Polk	Francisco	Westward	385	6
Polk	Albany avenue	Eastward	278	6
Polk	Albany avenue	Kedzie avenue	625	6
Powell park	Western avenue	Powell avenue	494	4
Powell avenue	Fullerton avenue	Crossing	26	6
Pratt	Green	Sangamon	528	6
Prindiville	Milwaukee avenue	Stave	427	4
Rebecca	Western avenue	Westward	450	6
Rhine	Western avenue	Oakley avenue	650	6
Rhine	Myrtle avenue	Milwaukee avenue	950	6
Ridgway	Chicago avenue	Augusta	960	6
Robey	Thirteenth	Crossing	48	6
Rockwell	North avenue	Southward	24	12
Rockwell	Thomas	Southward	525	12
Rundel court	Aberdeen	Crossing	60	4
Rumsey	Ohio	Crossing	44	6
St. George's court	Stave	Milwaukee avenue	478	4
St. Hedwig	Webster avenue	Northward	515	6
St. Louis avenue	Twenty-third	Northward	125	8
St. Louis avenue	Jackson	Southward	90	8
St. Louis avenue	Ogden avenue	Eighteenth	636	16
St. Louis avenue	Ogden avenue	Southward	78	8
St. Louis avenue	Central Park boulevard	Northward	800	8
Sacramento square	Sacramento	Westward	109	6
Sacramento ave.	Lake	Crossing	108	8
Sacramento ave.	VanBuren	Congress	350	8
Sacramento ave.	Harrison	Northward	193	8
Sacramento ave.	Washington boulevard	Warren avenue	250	8
Sacramento ave.	Wilcox avenue	Jackson	545	8
Sawyer avenue	143 feet north of Twenty-first	Southward	309	6
Sawyer avenue	Twenty-first	Twenty-third	1,161	6

WEST DIVISION—Continued.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Sebor	Desplaines	Halsted	887	8
Seventeenth	Western avenue	Crossing	50	6
Shakspere av.	California avenue	Crossing	37	8
Shober	North avenue	Southward	300	6
Sixteenth	Fairfield avenue	Westward	135	6
Sobieski	Webster avenue	Northward	625	6
Spaulding avenue	Jackson	Crossing	84	6
Spaulding avenue	Colorado avenue	Crossing	75	6
Springfield ave.	Huron	Northward	1,141	8
Springfield ave.	Indiana	Southward	634	8
Station	Leavitt	Greenwood	405	6
Staunton avenue	Park avenue	Lake	163	8
Stave	Armitage avenue	Northward	698	6
Stave	Cornelia	Prindiville	830	6
Superior	Rockwell	Westward	96	6
Superior	Ashland avenue	Noble	1,250	6
Talman avenue	Thirteenth place	Southward	555	6
Talman avenue	Twelfth	Crossing	72	6
Talman avenue	Lake	Crossing	60	6
Taylor	Albany avenue	Sacramento avenue	645	6
Taylor	Francisco	Westward	326	6
Taylor	Campbell avenue	Crossing	20	6
Thirteenth	Western avenue	Raleigh court	210	6
Thirteenth place	Talman avenue	Washtenaw avenue	331	6
*Thomas	Robey	Hoyne avenue	634	6
Thomas	Dudley	Robey	295	6
Thompson	Leavitt	Crossing	43	6
Tinkham	William	Southward	500	8
Tinkham	Chicago avenue	Northward	1,300	8
Troy	Twelfth	Crossing	38	6
Troy	Twenty-sixth	Southward	690	6
Troy	Twenty-fifth	Northward	387	6
Troy	Jackson	Crossing	50	6
Trumbull avenue	Colorado avenue	Southward	335	6
Trumbull avenue	Twenty-fifth	Twenty-sixth	622	6
Twelfth	Albany avenue	Troy	333	12
Twelfth	Ashland avenue	Ogden avenue	4,621	6
Twelfth	Ashland avenue	Western avenue	5,178	16
Twelfth	Western avenue	California avenue	2,728	12
Twentieth	Western avenue	Crossing	85	6
Twenty-first	California avenue	Westward	630	6
Twenty first	Western avenue	Crossing	85	6
*Twenty-first	Washtenaw avenue	Rockwell	638	6
*Twenty-second	Fairfield avenue	Rockwell	974	8
Twenty-second	Western avenue	Crossing	65	8
Twenty second	California avenue	Crossing	46	8
Twenty-fifth	Whipple	Troy	667	6
Twenty-sixth	California avenue	Millard avenue	5,630	16

*Expense of property owners.

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Length of Pipe in feet.	Size in inches.
Twenty-eighth	Bonney avenue	Millard avenue	675	8
Van Buren	Spaulding avenue	Eastward	380	6
Waller	Wright	Northward	112	4
Walnut	Parker place	Westward	810	6
Walnut	Homan avenue	Eastward	878	6
Walnut	California avenue	Westward	860	6
Washtenaw av.	Adams	Crossing	70	8
*Washtenaw av.	Twenty-first	Twenty-second	673	8
Washtenaw av.	Twelfth	Southward	292	8
Washtenaw av.	Douglas Park avenue.	Northward	143	8
Webster avenue.	Leavitt	Robey	1,333	6
Werder	California avenue	Eastward	480	6
Western avenue.	Lill avenue	Fullerton avenue	609	8
Western avenue.	Indiana	Kinzie (viaduct)	686	12
Western avenue.	Grand avenue	Kinzie (viaduct)	681	6
Western avenue.	Fulton	Kinzie (viaduct)	600	8
Western avenue.	Fulton	Kinzie (viaduct)	637	6
Western avenue.	Twenty-second	Laughton	1,260	8
Western avenue.	Sixteenth	Van Horn	963	8
Western avenue.	Nineteenth	Twenty-second	1,362	8
Williams avenue.	Hamlin avenue	Eastward	996	6
Winchester ave.	Taylor	Twelfth	768	6
Winchester ave.	Polk	Taylor	830	6
Wood	Thirteenth	Thirteenth place	812	8
Wood	Thirteenth	Southward	1,279	8
	Total.		187,757	
	Add branch pipe for hydrants.		793	4
	Add branch pipe for hydrants.		4,615	6
	Total feet laid in West Division.		193,165	

*Expense of property owners.

RECAPITULATION OF PIPE LAID DURING 1888, INCLUDING HYDRANT BRANCHES.

DIVISION.	Length of Pipe in Feet.	Diameter of Pipe in Inches.	Length of Pipe in Feet.	Diameter of Pipe in Inches.	Length of Pipe in Feet.	Diameter of Pipe in Inches.	Length of Pipe in Feet.	Diameter of Pipe in Inches.	Length of Pipe in Feet.	Diameter of Pipe in Inches.	Length of Pipe in Feet.	Diameter of Pipe in Inches.	Total Length of Pipe in Feet.
North..................	300	4	17,139	6	4,631	8	0	12	587	16	0	24	22,657
South..................	751	4	10,555	6	5,401	8	2,507	12	0	16	0	24	19,214
West..................	8,720	4	96,754	6	50,511	8	18,016	12	16,434	16	2,730	24	193,165
Total in Feet...........	9,771	4	124,448	6	60,543	8	20,523	12	17,021	16	2,730	24	235,036
Total in Miles..........	$1\frac{4491}{5280}$	4	$23\frac{3008}{5280}$	6	$11\frac{2463}{5280}$	8	$3\frac{4683}{5280}$	12	$3\frac{1181}{5280}$	16	$0\frac{2730}{5280}$	24	$44\frac{2716}{5280}$

PIPE TAKEN UP OR ABANDONED IN 1888.

STREET.	FROM	TO	TAKEN UP OR ABANDONED.		SUBSTITUTED.	
			Length in Feet.	Size in Inches	Length in Feet.	Size in Inches.
Ashland avenue.	Fulton..........	Carroll avenue...	331	6	662	6
Burling.........	North avenue...	Center..........	2,625	4	2,625	6
Belden avenue ..	Lincoln avenue..	Westward......	108	4	108	6
California avenue	Harvard........	Fillmore........	750	6	750	12
Carroll avenue ..	Ashland avenue.	Eastward	218	6	436	6
Clark..........	Fullerton avenue	Northward......	16	4	16	8
Canal	Lake	Randolph.......	400	4	400	8
Elston avenue...	Snow...........	Webster avenue.	3,100	4	3,100	8
Erie............	St. Clair........	Eastward	440	4	440	6
Franklin........	North avenue ...	Sigel..........	1,564	4	1,564	6
Fullerton avenue	Elston avenue ...	Eastward	426	4	426	6
Fullerton avenue	Clark...........	Larrabee........	950	4	950	6
Gardner	Halsted.... ...	Eastward	56	4	56	6
Grove	Seventeenth.. ..	Southward......	675	6		
Halsted.	Division........	Rees	997	4	997	6
Harvard........	California avenue	Westward...... .	630	6	630	8
Howe	Willow	Center..........	1,562	4	1,562	6
Hudson avenue..	North avenue ...	Southward......	1,608	4	1,608	6
Indiana.........	Rush...........	Crossing........	71	4	71	6
Jackson........	Fifth avenue	Market.....	800	4	800	8
Jackson.........	Canal...........	Westward......	210	8	720	6
Jackson.........	Canal	Westward.......	50	4		
Larrabee........	Fullerton avenue	Northward......	13	4	13	6
Laurel..........	Twenty-seventh.	Southward......	920	8	920	12
Market.........	Adams	Van Buren......	858	3		
Madison........	Rockwell.......	Westward.......	657	8	657	8
Michigan avenue.	River...........	South Water....	580	6	530	8
North avenue ...	Rockwell.......	Maplewood ave .	250	4	250	8
Ohio...........	Rush..........	Crossing.......	70	4	70	6
Ohio...........	Ashland avenue.	Paulina........	602	4	602	6
Rumsey	Ohio...........	Southward	44	4	44	6
Rush........ ..	Illinois	Ohio...........	594	4	594	8
Ritchie place....	Banks..........	Southward......	316	4	316	6
Rockwell.......	North avenue...	Southward.....	24	6	24	12
Sawyer avenue..	Twenty-first.....	Southward......	140	4	140	6
Sebor...........	Desplaines......	Halsted.........	887	4	887	8
Superior........	Ashland avenue.	Noble..........	1,250	4	1,250	6
Twelfth.........	Clark........ ..	Westward.......	760	16	760	6
Twelfth.........	Western avenue.	Westward.......	640	8	640	12
Twelfth........	Fairfield avenue.	Westward.......	330	8	330	12
Vine	Willow	North avenue...	1,023	4	1,023	6
Western avenue.	Fulton...... ...	Kinzie..........	575	8	750	6
Western avenue.	Grand avenue...	Kinzie..........	630	12	630	12
Wieland........	North avenue...	Schiller....	1,250	4	1,250	6
	Total.....................		29,950		29,601	

RECAPITULATION OF PIPE TAKEN UP OR ABANDONED IN 1888.

3-inch	858 feet.
4-inch	21,212 feet.
6-inch	3,158 feet.
8-inch	3,332 feet.
12-inch	630 feet.
16-inch	760 feet.
Total	29,950 feet.

TABLE SHOWING AMOUNT OF PIPE IN USE IN THE CITY AT THE CLOSE OF 1888.

Diameter of Pipe.	1887.	1888.			
	Amount in Use in Feet.	Amount Taken up or Abandoned in Feet.	Amount Laid in Feet.	Grand Total in Feet in Use at the end of 1888.	Grand Total in Miles.
36	46,770	....	....	46,670	$8\frac{4430}{5280}$
30	39	....	....	39	$0\frac{39}{5280}$
28	160	....	....	160	$0\frac{160}{5280}$
24	97,173	... .	2,730	99,903	$18\frac{4863}{5280}$
16	99,156	760	17,021	115,417	$21\frac{4537}{5280}$
12	197,249	630	20,523	217,142	$41\frac{662}{5280}$
10	8.012	....	....	8,012	$1\frac{2732}{5280}$
8	699,105	3,332	60,543	756,316	$143\frac{1276}{5280}$
6	1,462,108	3,158	124,448	1,583,398	$299\frac{4678}{5280}$
4	746,069	21,212	9,771	734,628	$139\frac{708}{5280}$
3	14,037	858	....	13,179	$2\frac{2619}{5280}$
Total in feet,	3,369,878	29,950	235,036	3,574,964	....
Total in Miles..	$638\frac{1238}{5280}$	$5\frac{3550}{5280}$	$44\frac{2716}{5280}$	$677\frac{404}{5280}$	$677\frac{404}{5280}$

The following table shows the number of stop-valves put in during the year 1888 :

DIVISION.	SIZE OF VALVES.							TOTAL
	4-in.	6-in.	8-in.	12-in.	16-in.	24-in.	36-in.	
North..............	0	27	5	0	1	0	0	33
South..............	1	26	8	2	0	0	0	37
West..............	24	167	86	29	7	2	0	315
Total..........	25	220	99	31	8	2	0	385

There were taken out during the year 1888, in the South Division, one 6-inch and one 16-inch valve; in the North Division, fourteen 4-inch valves, and in the West Division, four 4-inch and two 6-inch valves, leaving the net increase during 1888, 363.

NUMBER AND SIZE OF VALVES IN USE BY THE CITY AT THE END OF 1888.

DIVISION.	SIZE OF VALVES.							TOTAL
	4-in.	6-in.	8-in.	12-in.	16-in.	24-in.	36-in.	
North..............	164	378	268	32	13	12	3	870
South..............	148	534	575	67	16	15	4	1,359
West..............	535	1,285	809	155	57	24	5	2,870
Total..........	847	2,197	1,652	254	86	51	12	5,099

HYDRANTS PLACED DURING 1888.

The following tables show the hydrants placed and removed during 1888 and the total number now in use:

PLACED.

Division.	2½-inch Single.	2½-inch Double.	4-inch Double.	Total.
North	4	55	0	59
South	11	32	1	44
West	61	353	2	416
Total	76	440	3	519

TAKEN OUT.

Division.	2½-inch Single.	2½-inch Double.	4-inch Double.	Total.
North	29	0	0	29
South	2	0	0	2
West	20	0	0	20
Total	51	0	0	51

Net increase during 1888................468.

TOTAL NUMBER OF HYDRANTS IN USE IN THE CITY, DECEMBER 31, 1888.

Division.	2½-inch Single.	2½-inch Double.	4-inch Double.	Total.
North	403	413	129	945
South	734	729	191	1,654
West	1,389	2,143	236	3,768
Total	2,526	3,285	556	6,367

Fire cisterns were put in during the year at the following places:

Intersection of Fifth avenue and Van Buren street.
Intersection of Franklin and Jackson streets.
Intersection of Franklin and Washington streets.
Intersection of Fulton street and Milwaukee avenue.
Intersection of Harrison street and Third avenue.
Intersection of Michigan avenue and Monroe street.
Intersection of Michigan avenue and Jackson street.

There are now eighty-three cisterns available for fire purposes.

WATER METERS AND HYDRAULIC ELEVATORS.

Whole number of elevators using water January 1, 1888	381
Whole number of elevators added	4
Whole number of elevators now in use	326
Whole number of elevators removed	59

A number of elevators reported as using water are sealed off and only use it while repairing gas engines.

Whole number of meters using water January 1, 1888	3,273
Whole number of meters using water December 1, 1888	3,122

WATER METERS.

SIZE OF METERS.	⅝-inch.	¾-inch.	1-inch.	1½ inch.	2-inch.	3-inch.	4-inch.	6-inch.	Total.
Number in use December 31, 1887.	672	249	1,028	533	435	339	15	2	3,273
Number added in 1888.	18	24	56	43	40	31	1	0	213
Whole number........	690	273	1,084	576	475	370	16	2	3,486
Number removed during 1888...	182	30	91	27	0	33	1	0	364
Total number in use December 31, 1888...	508	243	993	549	475	337	15	2	3,122
Number of city meters removed and replaced by new meters..	29	10	34	11	13	7	1		105
Number of meters replaced which were charged for...... .	154	69	321	117	93	98	8		860
Number of meters replaced which were not charged for......	125	80	250	75	63	17			610
Number of meters replaced during 1888..	279	149	571	192	156	115	8		1,470
Number of meters owned by city.	182	49	444	123	76	117	1		992
Number of meters owned by private parties....	326	194	549	426	399	220	14	2	2,130
Total number in use....	508	243	993	549	475	337	15	2	3,122
Number bought of manufacturer..		6	19	28	27				80
Number bought of private parties.	16	5	15	6	6	3			51
Total	16	11	34	34	33	3			131
Number on hand Dec. 31, 1888 ..	59	8	9	7	13	12	3		111

RIVER AND DREDGING.

Owing to the extreme low stage of water during the season, it has been difficult to keep the channel deep enough for vessels of deep draught; and although the entire appropriation was expended in dredging the worst places, a great many vessels have grounded in the channel, causing blockades and vexatious delays to the general traffic of the river.

Vessels are being built each year of greater draught than the year preceding, and the entire channel should be deepened at as early a date as possible, or else the larger vessels must seek other ports, leaving the carrying trade of Chicago to those of less draught.

The mean level of the water in the river has been sixty-four one-hundredths (0.64) of a foot lower than for the year 1887, and one and twenty-four one-hundredths (1.24) feet lower than for 1886. It was the lowest stage for at least seven years. Twice during the year the gauge has shown 0.0, or the level of low water in Lake Michigan in 1847, from which our city datum is taken.

The following tables give the height of water in the river and in Lake Michigan, the temperature, and the amount of rainfall for the year 1888:

HEIGHT OF WATER IN LAKE MICHIGAN,

1888,

From observations taken at Crib.

MONTH.	Mean.	Highest.	Lowest.	Number of days above mean.
January	0.85	1.41	0.01	17
February	0.80	1.31	0.41	13
March	0.83	1 51	0.01	11
April	1.13	1.61	0.01	16
May	1.61	2.01	1.01	17
June	1.80	2.31	1.31	15
July	1.78	2.81	0.71	16
August	1.74	2.51	1.21	14
September	1 64	2.21	1.21	15
October	1.46	2.51	0.91	12
November	1.33	3.01	0.61	11
December	0.64	1.51	0.39	18
Average for year	1.30	....	....	....

HEIGHT OF WATER IN CHICAGO RIVER,

1888,

From observations taken at pipe yard (Chicago avenue).

MONTH.	Mean.	Highest.	Lowest.	Number of days* above mean.
January...........	1.36	2.30	0.00	14
February..........	1.24	1.90	0.00	13
March...........	1.48	1.80	0.80	11
April..............	1.56	2.40	0.80	12
May..............	2.08	2.60	1.50	12
June..............	2.31	3.50	1.20	10
July..............	2.33	2.80	2.00	13
August............	2.25	2.70	1.70	14
September.........	2.06	2.50	1.50	11
October...........	1.86	2.70	1.30	12
November..........	1.71	2.60	1.30	10
December..........	1.16	1.80	0.40	13
Average for year..	1.78	....	....	....

*Not including Sundays or holidays.

STATEMENT SHOWING THE PRECIPITATION AT CHICAGO, ILLS., FOR EACH DAY OF THE YEAR 1888.

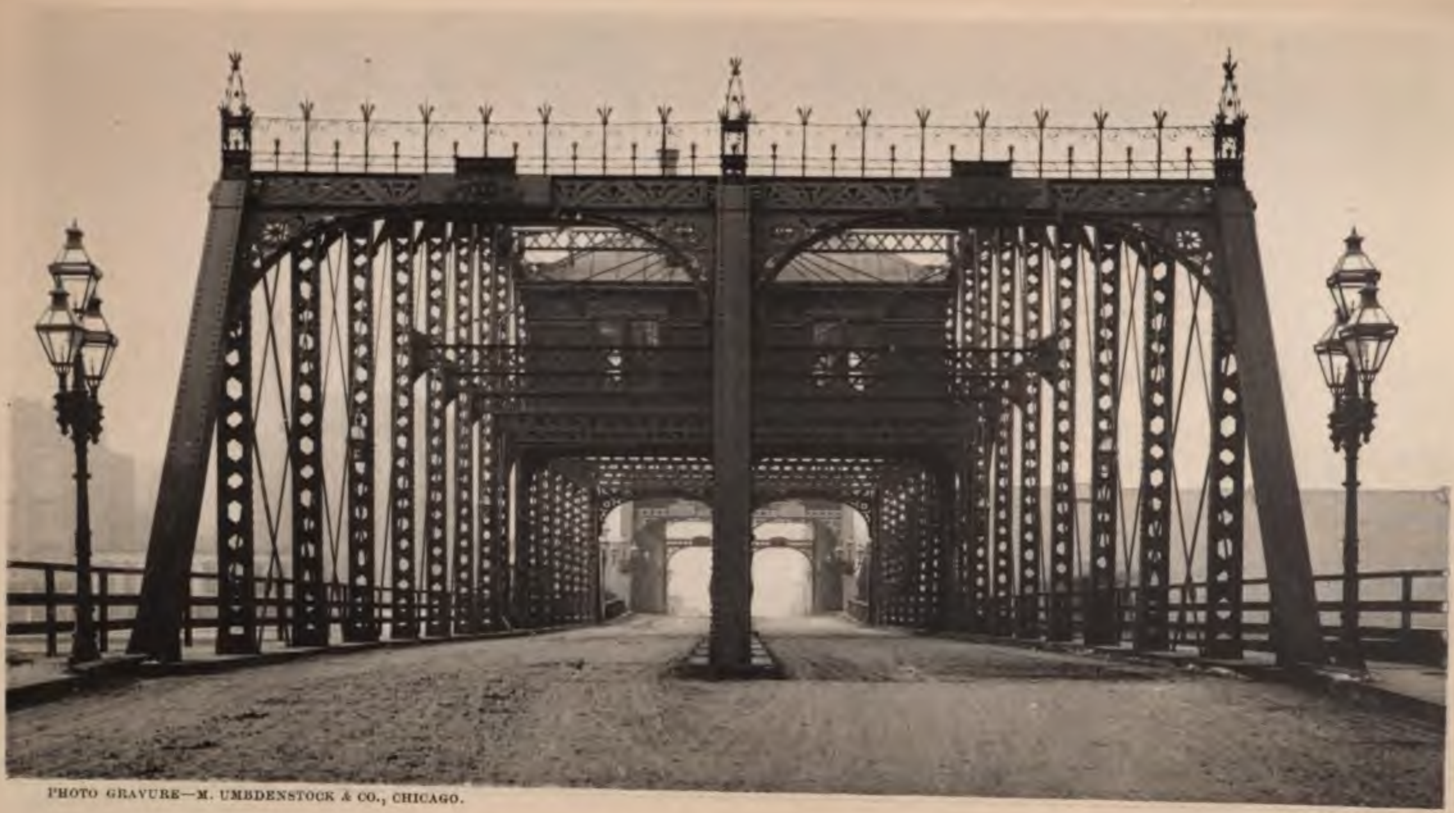
For the following tables, showing Precipitation and Temperature we are indebted to the courtesy of Mr. H. C. Frankenfield, U. S. Signal Observer at Chicago.

DATE.	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November	December
1	T	......	.15	......	.03	24	... ..	.17	......	......	......	......
2	.12	......	.30	.....	T	......	......	.72	... ..	.36	.33	......
3	.02	. ....	T	......	.14	.....	......	.28	......	......	.....	......
4	......	.28	.05	......	.04	......	1.02	.02	......	......	......	......
5	.02	......	T	.14	......	.....	.06	......	......	.54	.85	T
6	.51	.03	. ...	......	......	......	.01	.10	......	.16	.12	......
7	.05	.15	......	T	.84	......	......	T	......	......	......	......
8	.02	......	.....	.02	1.02	......	.34	......	.16	......	1.10	......
9	T	. ...	.02	.74	T	T	.81	. ....	.....	......	.64	......
10	T	T	.42	.16	04	.02	.....	T	......	.....	.10	.....
11	......	......	.03	.....	.71	......	......	.....	.01	......	.....	......
12	.45	......	......	.. ...	.02	.01	......	.12	T	.13		......
13	.01	......	.....	......	......	......	......	......	.....	.02	....	.07
14	.12	T	......	.....	T	......	......	T	......	......	......	......
15	T	.01	... ..	.18	.03	.....	.....	.48	......	.10	......	.21
16	... .	......	......	.. ...	......	......	......	.... .	.45	.11	.05	.34
17	T	.....	T	... ..	.05	......	......	.12	.23	......	......	.02
18	T	.....	....	......	.38	......	.01	......	.07	.69	.09	T
19	......	.10	.33	.18	......	......	T	T	....	62	.01	.18
20	T	.04	.18	T	....	T	......	.08	. ....	......	......	......
21	T	.....	......	.01	......	15	......	... .	......	......	.....	T
22	......	......	T	.01	. ...	.02	.28	....	. ....	.02	......	......
23	T	. ....	.22	. ....	T	07	T	......	.....	T	......	......
24	T	.60	.05	.....	......	. ....	......	......	......	......	.....	.10
25	.17	.17	.25	.....	.10	.....	.09	......	.06	......	.....	.02
26	.05	T	.99	......	... ..	......	.02	......	T	.01	. .	.98
27	.02	.....	... ..	.....	1.14	.97	......	.01	....	.19	......	.02
28	......	... .	T	.....	1.46	.18	......	......	......	......	.05	......
29	......	.13	.... .	......	......	......	....	......	......	......	.04	......
30	T	......	......	.69	.....	.....	T	......	.....	......	.01	T
31	......	......	......	......	.22	......	1.29	......	......	.....	.....	T
Totals....	1.56	1.51	2.99	2.13	6.22	1.66	3.93	2.10	.98	2.95	2.89	1.94

"T" indicates trace of precipitation, but not enough to measure.
Total precipitation for year, 30.86.

STATEMENT SHOWING THE MEAN TEMPERATURE AT CHICAGO, ILLS., FOR EACH DAY OF THE YEAR 1888.

DATE.	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November	December
1	11.3	31.0	45.7	42.3	37.7	58.0	68.0	70.0	60.0	58.5	62.5	30.0
2	10.7	30.3	36.3	34.0	45.0	48.0	74.5	73.5	59.5	42.0	52.5	32.0
3	13.7	31.0	19.3	35.7	61.7	54.7	81.5	81.0	68.5	43.5	47.5	31.5
4	37.3	32.7	19.3	45.0	49.3	65.0	71.5	70.0	62.5	54.0	53.0	34.0
5	34.0	19.3	18.7	61.3	56.3	72.7	72.0	71.0	61.0	51.0	57.5	34.5
6	36.7	18.7	20.7	46.0	52.0	62.0	81.5	76.5	62.5	50.5	43.0	32.0
7	28.0	11.0	27.7	36.3	44.3	50.0	70.0	72.0	69.0	51.5	45.0	39.5
8	19.3	-5.0	29.3	39.3	53.7	70.3	66.0	66.5	70.5	49.5	44.0	40.0
9	19.3	-10.3	40.0	45.0	55.0	73.3	63.5	62.0	67.0	45.5	45.0	37.5
10	8.3	10.0	39.0	47.3	62.0	61.7	72.5	64.0	68.0	49.0	40.0	35.5
11	0.7	13.7	24.7	46.0	57.0	59.0	79.0	65.0	70.5	52.0	34.5	26.5
12	22.7	24.3	19.3	34.3	41.0	67.3	67.0	64.0	57.0	49.5	42.5	22.5
13	-1.3	35.7	19.0	50.3	39.0	73.3	61.0	66.0	55.5	49.0	46.0	27.0
14	1.7	18.3	24.7	41.0	42.7	78.3	66.5	70.0	62.0	52.0	49.5	27.5
15	-10.3	13.0	40.0	48.0	42.3	77.7	68.5	74.0	61.0	50.0	41.0	37.0
16	1.7	29.0	33.3	38.3	43.3	73.3	70.5	78.0	57.5	46.5	26.5	42.0
17	12.3	35.7	30.7	53.7	49.7	74.0	73.5	67.0	53.0	44.0	24.5	30.0
18	1.7	39.0	45.7	47.7	45.3	72.7	75.0	67.0	55.0	48.0	35.0	22.0
19	11.0	45.7	53.3	37.0	47.7	75.3	67.0	70.5	55.0	43.0	38.5	24.0
20	-1.7	24.7	34.3	39.7	52.3	81.7	69.5	71.5	59.5	36.5	34.0	26.5
21	3.3	25.3	21.3	41.0	56.7	74.0	75.5	66.5	62.5	42.5	32.5	25.0
22	14.7	36.3	11.3	40.0	61.7	75.0	73.0	61.0	63.5	43.0	37.5	27.0
23	18.3	35.7	23.7	38.3	62.0	72.3	69.0	64.5	61.5	41.0	35.5	39.0
24	21.0	36.0	23.7	36.3	64.7	75.7	72.0	68.5	64.5	48.0	37.5	45.0
25	21.0	20.0	28.0	50.7	58.3	69.7	71.5	71.5	57.5	52.0	40.0	37.0
26	9.7	3.7	36.3	68.3	61.0	54.7	74.0	75.0	52.0	58.0	38.0	34.0
27	19.7	4.3	31.7	71.0	68.7	61.3	74.0	64.0	48.5	50.0	37.0	23.0
28	19.0	23.7	31.0	71.7	50.3	58.7	74.5	66.0	46.5	41.5	37.5	16.5
29	27.3	35.7	39.0	38.0	65.0	61.3	77.0	71.0	45.5	46.5	36.0	26.5
30	30.3	......	43.0	37.7	49.3	71.0	82.5	75.5	53.5	50.0	34.5	35.0
31	27.0	......	35.3	.....	55.7	......	70.5	62.0	......	60.5	.....	30.5
Averages.	15.1	23.1	30.5	45.4	52.6	67.4	72.0	69.2	59.7	48.3	40.9	31.3



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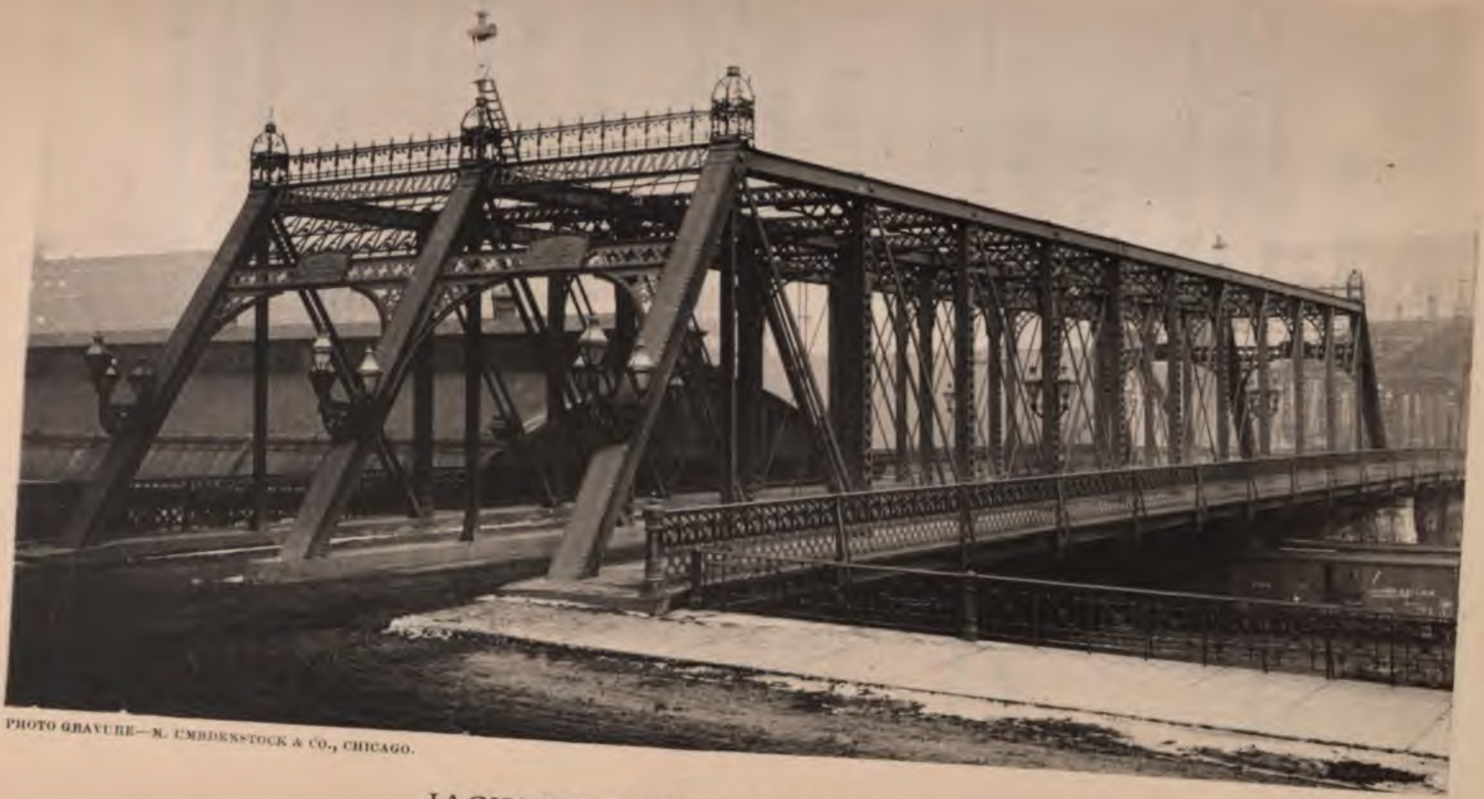
JACKSON STREET BRIDGE.



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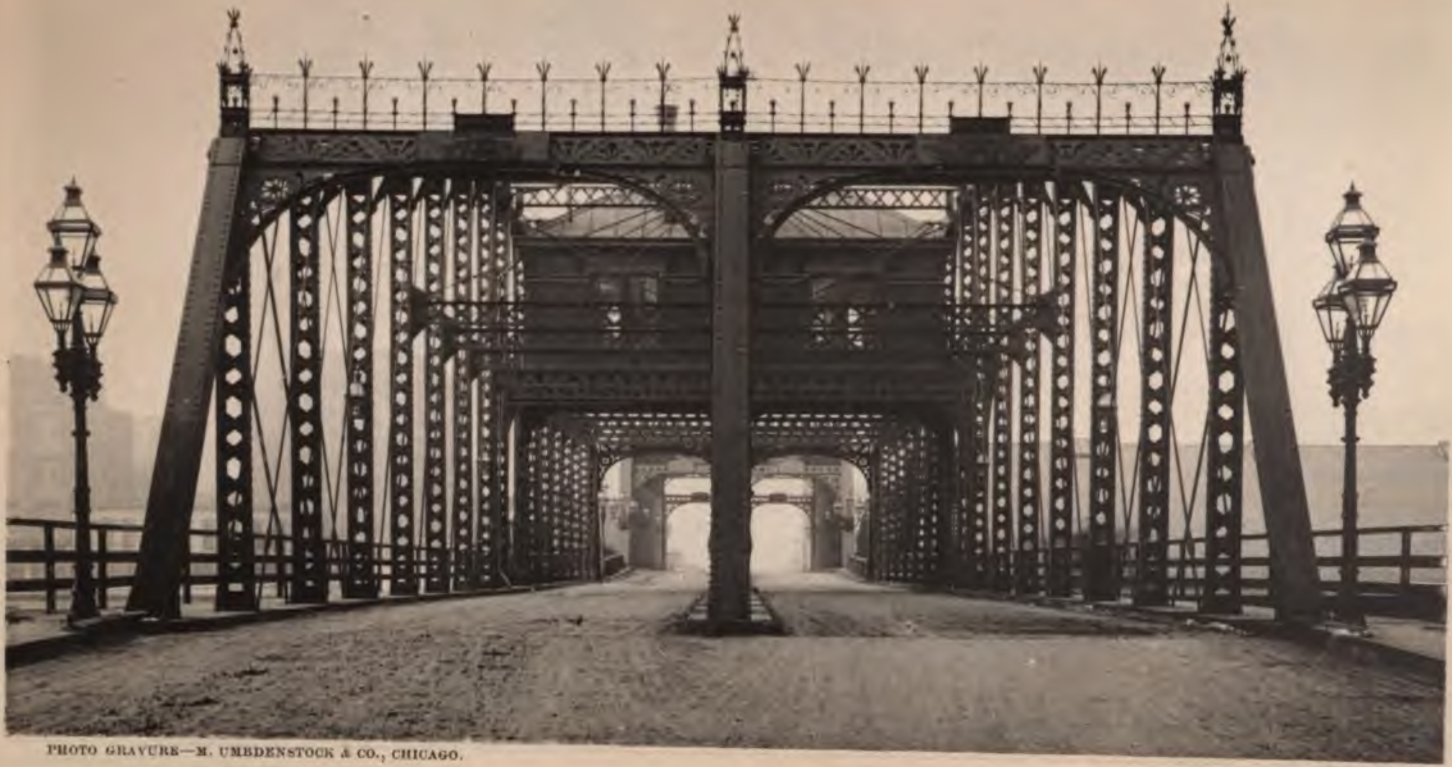
JACKSON STREET VIADUCT.



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JACKSON STREET BRIDGE.

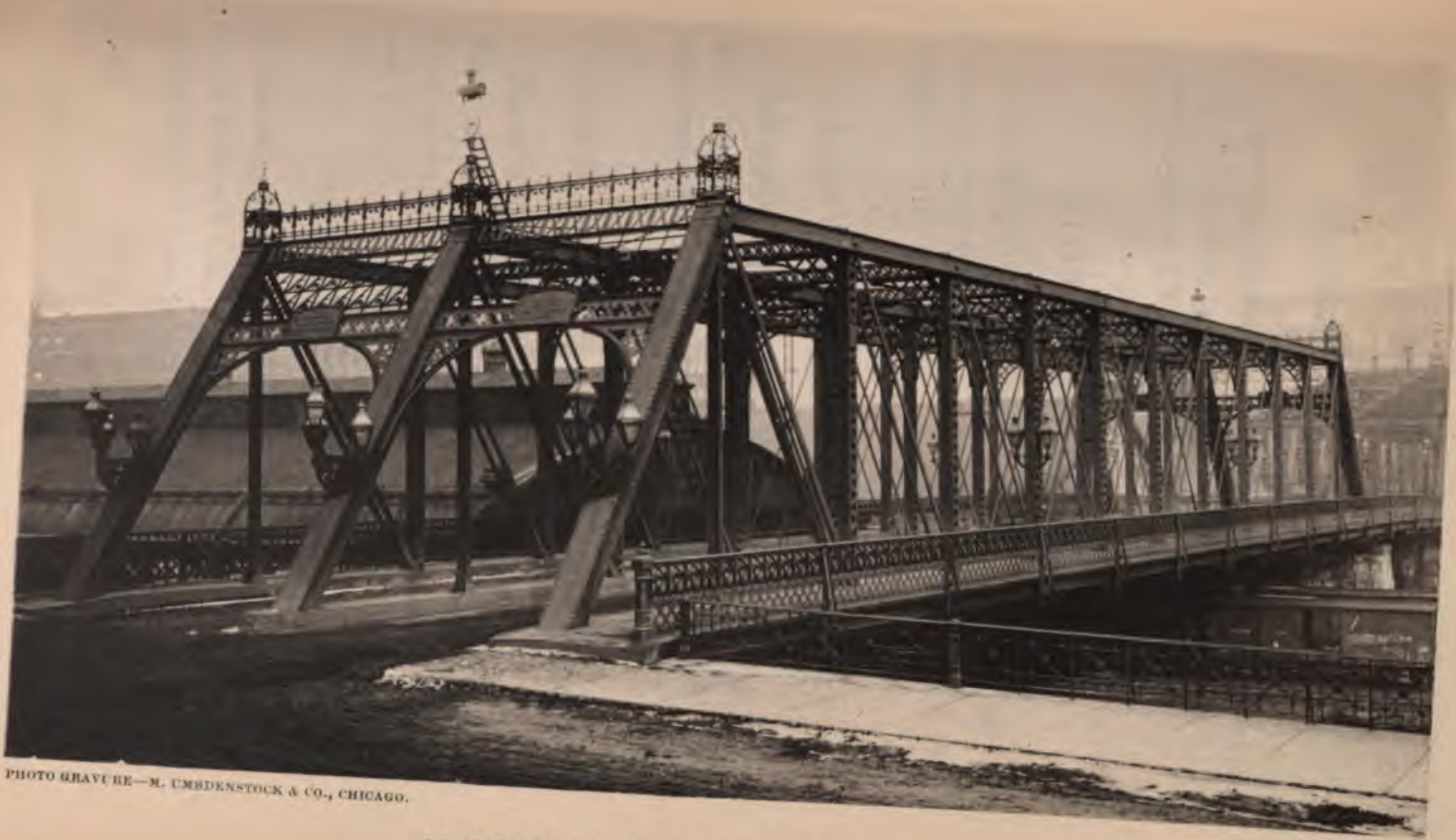


PHOTO GRAVURE—M. UMBDENSTOCK & CO., CHICAGO.

JACKSON STREET VIADUCT.

BRIDGES AND VIADUCTS.

A greater number of these structures have been built during the past year than ever before in one season, and at a less cost to the city.

EIGHTEENTH STREET BRIDGE.

This bridge was completed August 20, but owing to non-completion of the connecting viaduct, was not open to traffic until later.

EIGHTEENTH STREET VIADUCT.

This viaduct should have been completed March 1; was not finished until November 1, and the bridge and viaduct were opened to traffic November 6.

JACKSON STEET BRIDGE AND VIADUCT.

These were both opened to traffic August 25. Plats of the above mentioned bridges and viaducts were given in last year's report with statement of cost etc.

WELLS STREET BRIDGE.

This structure was furnished by the North Chicago Street Railroad Co., under the terms of their franchise giving them the use of La Salle street tunnel. It is in every way a first-class bridge, with double roadway, steam turning machinery etc. Its length is 220 feet on middle truss and its width fifty-eight feet over all.

The substructure was built by the Fitz Simons & Connell Co., and the superstructure by the Keystone Bridge Co., of Pittsburgh.

The cost was as follows :

Substructure	$59,000 00	
Superstructure	86,750 00	
Machinery	4,690 00	
Total		$150,440 00

This bridge was opened for traffic August 24, 1888.

The old structure was moved from its place at Wells street to the substructure prepared for it at Dearborn street. It has been repaired by the city, and is to be furnished with steam turning machinery by the North Chicago Street Railroad Co.

DEERING STREET BRIDGE.

A contract was let to the Chicago Dredging & Dock Co. for the pile substructure and protection of a bridge across the South Branch at Deering street, on October 20, which contract has been completed by them.

A combination bridge with steel chords and wooden braces will be erected there by Messrs. Schailer & Schniglau, to be completed about April 30, 1888. The cost will be about $28,000.00.

WESTERN AVENUE VIADUCT.

This viaduct is a double roadway structure, 140 feet span, over the tracks of the Chicago, Milwaukee & St. Paul Ry., the Chicago & North-Western Ry., and the Chicago, St. Louis & Pittsburgh Ry., at Western avenue and Kinzie streets.

The cost, paid entirely by the railroad companies, was as follows :

Substructure	$57,910 89	
Superstructure	17,000 00	
Sundries	5,801 99	
Total		$80,712 88

This amount does not include the cost of engineering, inspection and some other items not included in contracts.

This viaduct will probably be open for traffic early in February.

ASHLAND AVENUE VIADUCT.

This structure is over the tracks of the same railroads as the Western avenue viaduct. It consists of one double roadway truss span of 191½ feet, and four plate-girder spans of 46.25 feet each.

The south approach and the superstructure are chargeable, according to contract, to the railroad companies, and the north approach is to be paid for by the city, subject to a decision of court as to the liability of the railroad companies.

This viaduct is now practically completed and ready for traffic.

Contractors: substructure, Wm. F. Hair; superstructure, A. Gottlieb & Co.

The cost to date is as follows:

Substructure	$44,439 07	
Superstructure	44,684 00	
Sundries	5,194 28	
Total	$94,317 35	
City's portion	28,917 99	
Leaving to the railroad companies		$65,399 36

DEARBORN STREET VIADUCT.

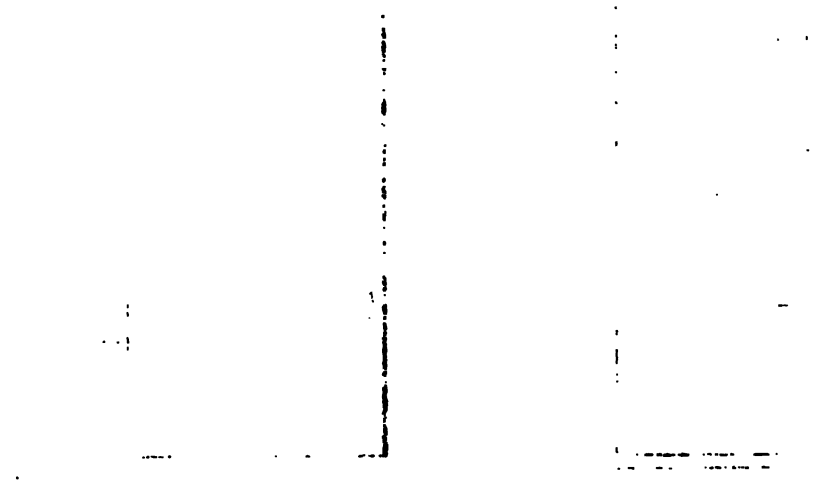
Late in the season, arrangements were made to let the work of constructing a viaduct at Dearborn street, whereby the bridge might be rendered available.

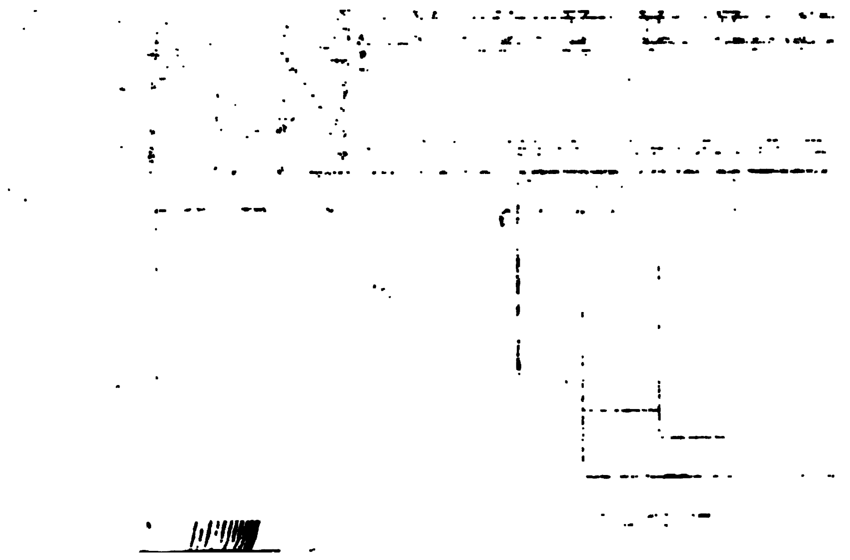
The viaduct occupies the west half of Dearborn avenue from Kinzie street to the river, leaving the east half for team traffic to and from the freight-houses and warehouses on the river.

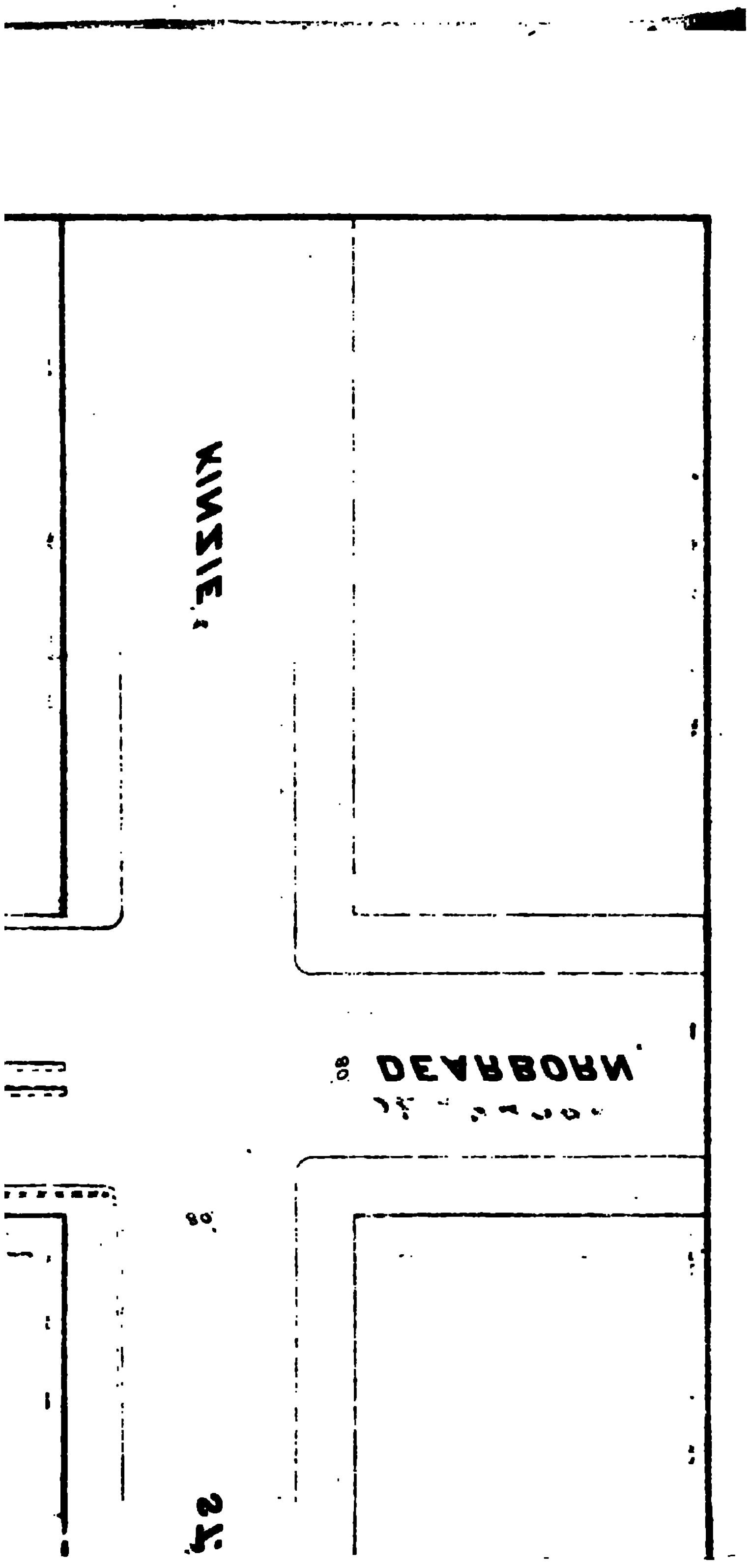
The contractors for the work are: substructure, M. C. & J. Duffy; superstructure, Lassig Bridge & Iron Works.

The cost as per contract is:

Substructure	$13,191 43	
Superstructure	44,957 00	
Sundries to date	4,710 31	
Total		$62,858 74
Toward this the Chicago & North-Western Railway Co., agrees to contribute		40,000 00
Leaving for the city		$22,858 74



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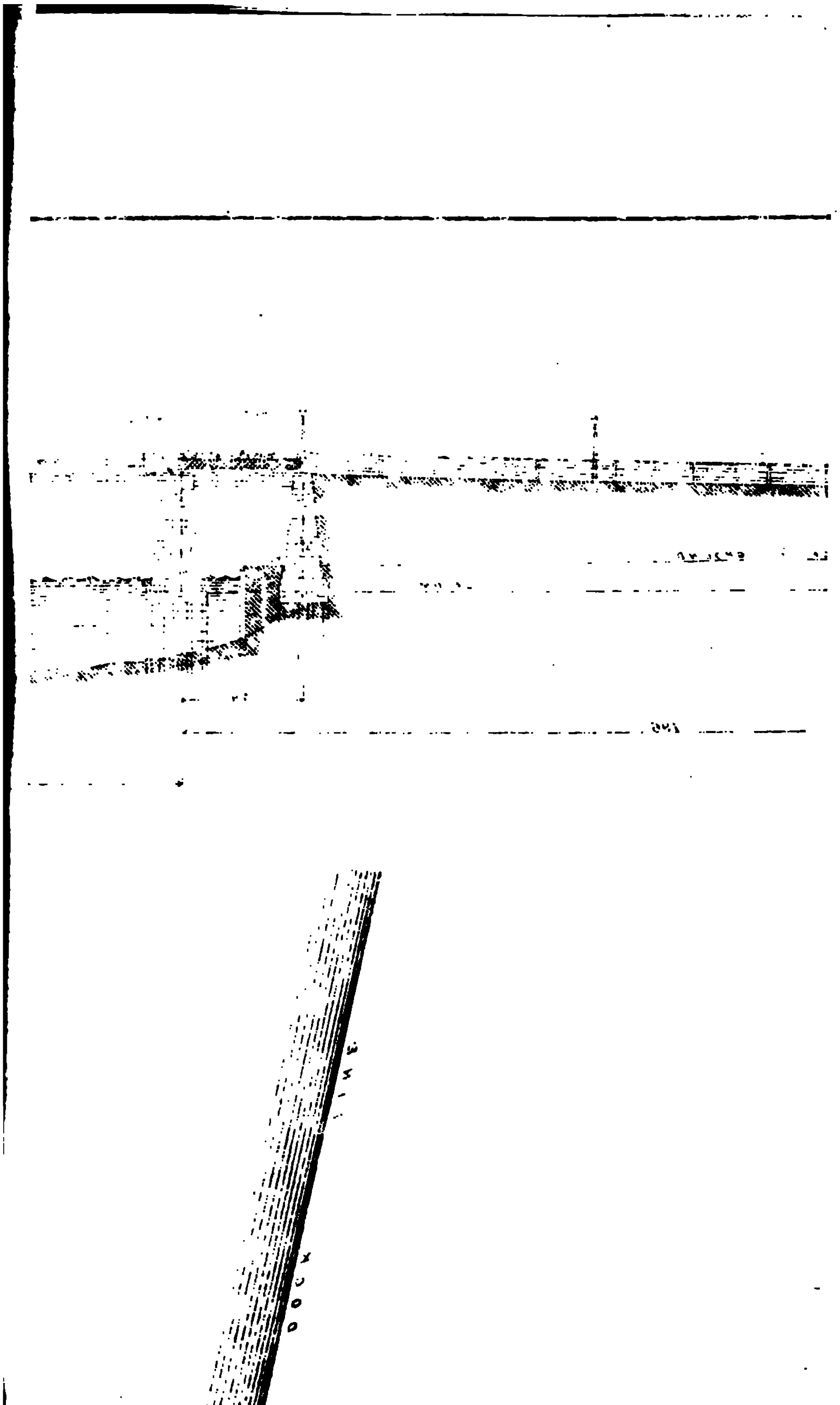
DOCK LINE

The work on this structure is being rapidly pushed by the contractor and it will probably be open for traffic about February 1, 1889.

POLK STREET VIADUCT.

This structure is built entirely at the expense of the Chicago & Great Western Railroad.

The contracts for the work were let directly by the railroad company, according to plans approved by the Department of Public Works. The work was done under the supervision of the Department.

The work comprises an approach from Ellsworth street to the west end of Polk street bridge; the raising of the bridge four feet and building up the centre pier, and putting in new end pieces to bridge, and a retaining wall back of the west pier.

On the east side of the river the viaduct extends to the west line of Fifth avenue, where it meets a very handsome approach, descending northward, and built entirely on land furnished by the railroad company.

The work is about completed and the viaduct will be opened for traffic very soon.

The cost of the work cannot be ascertained at the present time.

The character and extent of the structure will be shown by the accompanying plate.

FIFTH AVENUE APPROACH TO TWELFTH STREET VIADUCT.

This structure is a continuation of Fifth avenue from Taylor street to Twelfth street viaduct, adding greatly to the usefulness of that structure.

It consists of an approach of curb wall and filling for 200 feet, the remainder being girder work.

The work was done by the following parties: substructure, Joseph Downey; superstructure, Chicago Forge & Bolt Company.

This approach was completed and opened for traffic December 3, 1888, and immediately became a much used thoroughfare.

The cost has been $60,000.00, paid entirely by the Chicago & Great Western Railroad.

EAST TWELFTH STREET VIADUCT WEST OF CLARK STREET.

The wooden trestle work at the east end of Twelfth street bridge has been removed and an iron superstructure, supported partly on stone piers, and partly by iron columns, has been built in its place by the Chicago, Rock Island & Pacific Railway. For this the city pays the railroad company $20,000.00, and is forever released from all land damages in connection with that portion of the viaduct.

This makes a continuous structure of iron from the east side of Clark street to Twelfth street bridge.

EAST TWELFTH STREET VIADUCT EAST OF CLARK STREET.

Arrangements were completed early in the season and plans decided on, for the extension of Twelfth street viaduct from the east line of Clark street eastward to State street, the Atchison, Topeka & Santa Fe Railroad to pay for the work.

Contracts were let for both substructure and superstructure, and the work on the substructure between Clark street and State street has been completed.

The superstructure is well under way, and will probably be completed in May.

The cost will be about $170,000.00. Contractors for substructure, Sackley & Peterson; contractors for superstructure, Riter & Conly, of Pittsburgh.

THIRTY-FIFTH STREET VIADUCT.

This viaduct, when completed, will span from the east side of Stewart avenue to the west side of the

Chicago & Western Indiana tracks, a distance of about 400 feet. The approaches will reach eastward to about ninety feet east of Portland avenue, and westward to Parnell avenue, with side approaches on Portland avenue, Shields avenue and Butler street.

The substructure is under contract to R. F. Wilson, and is partly completed. The superstructure is being constructed by A. Gottlieb & Co.

This work should be completed about May 1, 1889.

The estimated cost, to be paid by the Pittsburgh & Fort Wayne and the Chicago & Western Indiana railroad companies, is as follows:

Substructure (estimated)	$ 97,947 61	
Superstructure	69,922 00	
Sundries	3,500 00	
Total		$171,369 61

BRIDGE AND VIADUCT REPAIRS.

Aside from the general repairs required in keeping the bridges and viaducts in running order, a larger amount was necessarily expended this year than any previous year in the city's history. One hundred and sixteen thousand, one hundred and twenty-nine dollars and sixty cents ($116,129.60) was spent exclusively in repairs during the past year ; but chiefly in renewal of bridges and approaches. A larger proportion than usual, however, was expended on viaducts.

At Rush street, over fifty feet of docking was built on the east side of the north approach, for protection to the approach, and long fender-piles had to be driven outside the dock to prevent steamers from pulling it down. The bridge and approaches were re-planked, and the bridge raised in the center, which was made crowning and covered with tarred paper to carry the water off from the machinery and turn-table. The bridge is now in good condition to receive the increased traffic which will be caused while the new bridge at Clark street is building.

Besides the expense of lights and watchmen, heavy chains were bought for the fastenings on Dearborn street bridge.

At State street bridge the south approach was re-planked, a new set of locks put on, and important improvements made in connection with the machinery in turning the bridge.

The north approach at Clark street bridge had to be rebuilt and repaired to insure safety until the bridge was taken down.

The changes at Randolph and Madison street bridges for turning by steam, necessitated new and stronger turning gear on turn-tables. A new set of bearing wheels was put on Madison street bridge, and the center protection rebuilt with new piling; new fender clumps were also driven for protection to bridge and approaches.

The south half of the center protection at Adams street bridge was rebuilt, and new fender clumps of long piles driven at each corner of the center protection.

Jackson and Eighteenth street bridges were supplied by the Department with tools, oil, coal and sundries, fittings and boats; all of which have been charged to the bridge department.

The west abutment above the off-set, or bridge seat, at Van Buren street bridge, had to be taken up and rebuilt, and anchored back, as it was continually slipping out and jamming the bridge fast.

At Harrison street bridge, the turn-table was entirely rebuilt, likewise the south half of the center protection, and new fender clumps of piles driven at the south end of protection and at the east approach of the bridge, and new timbers on bridge seat.

The south half of the center protection at Polk street was rebuilt with new piling and fender clumps of piles driven at the four corners of the center protection, and a new set of bearing wheels put on the turn-table.

The bridge house at Twelfth street bridge was moved to accommodate the new viaduct, and fitted up with sub-basement for storage of coal. The west stone pier or abutment commenced to move out against the bridge and had to be secured with heavy long anchor rods.

The east approach at Twenty-second street bridge had to have extra timbering to maintain it until the new bridge at Eighteenth street was completed.

The stone abutment at the south approach of South Halsted street bridge commenced moving out after the channel had been dredged, and had to be anchored back with long tie rods, reaching back sixty feet from the face of the abutment to a heavy timber bedded down across the street for an anchorage, and the south approach was rebuilt and re-planked. The north approach was also re-planked.

Both approaches at Main street bridge were re-planked, and heavy sheet plank driven on both sides of the river to prevent the filling being washed out from the action of the water by the passing tugs and steamers.

A new steel track was put on the turn-table at Fuller street bridge, and sheet plank driven at the east approach to prevent the filling from being washed out.

The east approach at Archer avenue bridge was rebuilt and the bridge re-planked.

Fender piles were driven at Douglas avenue bridge, and new wheel bents put in at the approaches.

Both approaches and the bridge at Western avenue were raised and re-planked. Sheet plank were driven on the east approach to retain the filling in the street, and the bridge house was repaired and painted.

The bridge over the outlet of the Canal pumping works was taken down and rebuilt.

Kedzie avenue bridge was replanked. That part of Archer avenue slip bridge belonging to the city was rebuilt and painted two coats.

The Erie street bridge turn-table was rebuilt, and new piling put under the whole south half of the center protection. The bridge was painted two coats, and the bridge house moved across the river to a more favorable location, rebuilt and painted two coats.

North Halsted street bridge and both approaches were re-planked, railroad tracks being laid over the bridge at the time of re-planking. A new steel track is on hand for the turn-table.

Halsted street canal bridge and both approaches were re-planked and new timbering put in. The bridge stringers, sidewalks and railings were also renewed, and railway tracks laid over the bridge.

At East Division street bridge, heavy clumps of fender piles were driven at both of the approaches for protection, and the west approach was rebuilt with new piles on the north side of the approach, and a new wheel bent on the west approach.

At West Division street bridge, the curb walls on the east approach of the south side of the street gave way the entire distance, ninety-six feet of the basin having been dredged out some years ago for a stone and sand yard. This wall was rebuilt, and eighty feet of dock built to protect the retaining walls, and a row of piles driven outside of the dock to support the sidewalk, which was all rebuilt and the east approach re-planked.

Street railway tracks were laid over the North avenue bridge. It was re-planked in the meantime, and both approaches rebuilt and re-planked.

Clybourn place bridge and both approaches were re-planked.

The west draw of Fullerton avenue bridge was dredged out, and six clumps of fender piles driven to protect the bridge and the west approach, which was repaired by putting in extra floor beams, and re-planked.

VIADUCTS.

At Clark street viaduct, the chords, truss-rods and stirrups, or hangers supporting the floor beams, were found in a dangerous condition from the constant fumes of smoke from passing locomotives, which is very much more destructive to the viaducts than all the traffic of heavy loads passing over them. All the stirrups were renewed, and all the truss rods which showed weakness. All the iron work was well cleaned and painted two coats of the best iron paint. Bents were placed under the center chord, where the greatest strain comes.

Wells street viaduct, of the same type or build, was completely renewed, with the exception of the top and bottom chords, which were thoroughly cleaned of all rust and painted two good coats. New sidewalks were built and bents placed under the bottom chords as near the tracks as practicable, shortening up the span to a considerable extent, and giving the structure great additional strength.

New sidewalks were built on Van Buren street viaduct and all the iron work well cleaned of rust and painted two coats of best prepared iron paint, and the chords re-covered and painted.

At Harrison street viaduct the roadways leading down to the coal yard on the south side, and the sand or stone yard on the north, received extensive repairs, both being rebuilt with new timber and re-planked. All of the old covering on the chords on the viaduct was taken off and the chords and connections thoroughly cleaned and painted two coats. A new wheel guard was put on both sides of the roadway and new sidewalks built, railing repaired and strengthened up and chords re-covered and painted.

Several of the principal viaducts, viz.: Polk, South Halsted, Erie, North Halsted, and Chicago avenue had to be repaired during the season on a foundation of five-inch planking. At Polk and South Halsted street viaducts, this was found to be in such a rotten condition it all had to be renewed. It was surfaced and made even, and covered with three-ply tarred paper, to preserve the planking as much as possible.

At Erie, Halsted, and Chicago avenue viaducts, they having been built later, the planking was found to be in better condition. About one-third or one-half, however, had to be removed, and they were covered likewise with three-ply tarred paper, and well tarred before laying down the cedar blocks.

The double-track viaduct at Twelfth street, spanning the Burlington and Fort Wayne tracks, was replanked. Street railroad tracks were laid over this viaduct and connected with Fifth avenue.

Iron stirrups for carrying the roadway at Canal and Sixteenth street viaduct were dangerously deteriorated by coal smoke and were all renewed, and the chords re-covered, cleaned and painted with two coats of paint, and the chord covers painted. A broad stairway was built at the south-east end of the viaduct, leading down to Sixteenth street. The planking on the roadway and sidewalks was also repaired.

The viaduct on the west side of the river, built in 1878, at Eighteenth street, from the river to the west side of the Pittsburgh & Ft. Wayne railroad tracks, a distance of over 600 feet, was constructed of pile bents, and one iron span of 200 feet. The pile structure was rebuilt entire. The tops of the piles were cut off one foot, substituting a bolster 12x12 inches by four feet long, to carry the ends of the 12x12 caps, leaving a space between the ends of caps, instead of butting the caps tight together, as had been done in building the old structure, in which the ends of the caps had become rotten and crushed, while the timber one foot from the end of the cap was perfectly sound. This result was owing to the want of air space for evaporation.

A wide and commodious stairway was built at the new viaduct at Indiana street, and some changes and repairs made at the west end of the approach.

The Desplaines street and Milwaukee avenue viaducts received quite extensive repairs on the roadways, besides the repairs of damages of two collisions caused by a wrecking car and a high freight car. The damages, however, were paid by the railroad company. These viaducts should be paved as soon as practicable, as it requires from 250,000 to 300,000 feet of lumber, including the stringers, to re-plank them, aside from the immense amount of labor connected therewith.

The amount expended in repairs and supplies on bridges and viaducts during 1888, was as follows or as near as may be:

BRIDGES.

Rush street bridge	$4,490 75	
State street bridge	2,792 45	
Dearborn street bridge	192 20	
Clark street bridge	1,834 60	
Wells street bridge	2,062 20	
Lake street bridge	4,397 75	
Randolph street bridge	2,543 20	
Madison street bridge	3,038 70	
Adams street bridge	2,705 60	
Jackson street bridge	6 75	
Van Buren street bridge	2,629 36	
Harrison street bridge	4,019 50	
Polk street bridge	2,869 55	
Twelfth street bridge	4,225 00	
Twenty-second street bridge	2,107 05	
South Halsted street bridge	2,629 00	
Main street bridge	2,950 95	
Ashland avenue bridge	1,460 40	
Archer avenue bridge	2,205 17	
Fuller street bridge	798 73	
Canal pumping works outlet	1,092 20	
Western avenue bridge	1,335 15	
Western avenue canal	342 20	
Douglas avenue bridge	1,825 17	
Kedzie avenue bridge	392 13	
Kedzie avenue canal	267 10	
Archer avenue slip bridge	800 50	
Kinzie street bridge	3,203 40	
Indiana street bridge	492 20	
Erie street bridge	6,464 93	
Chicago avenue bridge	1,123 82	
North Halsted street bridge	1,236 58	
North Halsted street canal bridge	3,505 20	
East Division street bridge	2,149 55	
West Division street bridge	2,863 60	
North avenue bridge	1,069 20	
Clybourn place bridge	768 34	
Fullerton avenue bridge	669 16	
Eighteenth street bridge	218 15	
Total		$80,446 79

VIADUCTS.

State street viaduct	$ 216 72	
Clark street viaduct	1,592 06	
Wells street viaduct	2,839 72	
Lake street viaduct	229 22	
Randolph street viaduct	526 77	
Madison street viaduct	777 27	
Adams street viaduct	264 58	
Van Buren street viaduct	1,028 66	
Harrison street viaduct	2,079 77	
Polk street viaduct	2,661 93	
Twelfth street viaduct	624 87	
Canal and Sixteenth street viaduct	1,879 72	
West Eighteenth street viaduct	7,402 77	
South Halsted street viaduct	1,600 77	
Blue Island avenue and elevated alleys connected	825 02	
Throop street and elevated alleys connected	716 72	
Sangamon street and elevated alleys connected	661 82	
North Halsted and Chicago avenue viaduct	4,264 52	
Erie street viaduct	2,129 77	
Halsted and Kinzie street viaduct	785 12	
Desplaines street viaduct	1,297 22	
Milwaukee avenue viaduct	1,141 72	
Indiana street viaduct	106 07	
Total for viaducts		$ 35,682 81
Total for bridges		80,446 79
Grand total		$116,129 60

NEW TUNNEL WORK.

LAND.

Three shafts have been sunk and 480 feet of tunnel, six feet in diameter, built by the city, under the direction of Mr. Wm. Innes, who has had extensive experience in this class of work, since December 20, 1887, when the first shaft was started in Desplaines street, near Harrison.

From this shaft, at a proper depth, a 6-foot tunnel was started in a southwesterly direction, crossing the old 7-foot tunnel with about six feet of earth between the top of the old and the bottom of the new.

The ground was soft, swelling clay for a considerable portion of the way, but the drift was carried to a distance of 246 feet, when work was stopped there and another shaft sunk at the proposed site of the new Central pumping station on Harrison street. From this new shaft, a tunnel was started to meet the former one. The two drifts met, as anticipated, very closely.

A third shaft was sunk at the Fourteenth street works. More difficulty was experienced in a portion of this shaft on account of very soft, swelling clay, and about fifteen feet of it had to be lined with solid timbers.

The rest of the tunnel work has been done by Mr. Andrew Onderdonk, contractor, under his contract with the city.

A shaft was started at Peck court in the latter part of December, which was intended to be the land end of the tunnel, but a very extensive deposit of quicksand was struck at an elevation which rendered this impracticable.

The borings made during the summer of 1887 having proved unreliable, a number of new borings were made very carefully.

These borings developed the fact that nearly the entire area east of the river and south of Harrison street had a stratum of quicksand overlying the rock, varying in thickness from a few inches to several feet, and that the boulder clay lies in a comparatively thin stratum between the quicksand and the blue clay above.

This stratum of boulder clay was found to be deeper at Park Row than at any other point, and the shore shaft was located there.

An intermediate shaft was sunk in Fifth avenue, about midway between Harrison and Polk streets.

These land shafts, on January 1, 1889, had all been connected by tunnel, with the exception of 324 feet between Clark street and Fourth avenue.*

The ground between the Desplaines street shaft and the Fifth avenue shaft was generally good, although some bad places were met between the river and the Fifth avenue shaft.

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* Since the above was written the connection has been made.

The ground eastward from the Fifth avenue shaft was pretty good for about 600 feet, after which veins of silt, carrying water sand pockets, etc., were met with, rendering the work very difficult. This drift was therefore abandoned with the intention of drifting through from Peck court to meet it.

The ground from Peck court west has been very bad all the way, and a box heading has been run nearly the entire distance, making the work slow and expensive.

The only serious damage done to buildings occurred at the northwest corner of Michigan avenue and Peck court over this drift. Two two-story and basement brick buildings and a stable settled somewhat, causing cracks of considerable size to appear. The damages have been settled for by the contractor.

From Peck court south, the ground was variable in character, from fair to bad.

A drift was run southward for 505 feet, where a very bad bed of water-bearing silt was met with. The drift was then bulk-headed and left for a connection from the south from Park Row shaft, which was successfully made.

From Park Row south the tunnel was started towards Fourteenth street station. Here bad ground was encountered from the beginning and at the end of 264 feet work was stopped.

Borings at short distances developed the fact that for from 600 to 800 feet the vein of hard material was too thin to successfully run an eight-foot tunnel without enormous expense and delay.

It was therefore decided to run two six-foot tunnels through the bad ground and unite them again in one of eight feet diameter as soon as practicable.

The total amount of land tunnel work for the year is as follows:

CITY.

Three shafts	182 feet.
Six-foot tunnel	480 feet.

CONTRACTOR.

Three shafts	220 feet.
Eight-foot tunnel	264 feet.
Seven-foot tunnel	6,740 feet.
Six-foot tunnel	388 feet.

LAKE TUNNEL.

The eight-foot tunnel eastward under the lake was started in June and carried forward for 278 feet. At that point quicksand was met at the bottom and swelling clay at the top of the tunnel. This occurred July 19.

In this drift the contractor concluded to introduce a hydraulic shield, and about eight weeks were spent in constructing this machine and getting it into position.

Various improvements were made in the machine from time to time as circumstances suggested, but after a thorough trial and large expense it had to be abandoned.

In the meantime, accurate borings showed that while it seemed to be impracticable to run an eight-foot tunnel all the way, two six-foot tunnels might be run for about 1,200 feet and then unite again in one of eight feet in diameter, which was decided upon.

These tunnels will unite about 600 feet west of the government breakwater, where the hard stratum grows much thicker.

The capacity of two six-foot tunnels is about the same as that of one eight feet in diameter.

Since the six-foot tunnels were started, the work has progressed very satisfactorily.

TEMPORARY CRIB FOR SHAFT 2½ MILES OUT.

A steel structure consisting of two concentric steel shells, the outer one seventy-five feet in diameter and the inner one thirty-one feet, was built opposite Peck court on the Illinois Central Railroad dock. Its height was fifty-four feet.

An unsatisfactory attempt was made to launch it, but it did not go far enough to allow scows to approach all sides, owing to the settling of the ways near the dock.

An attempt was made to lift it afterwards, but it was unsuccessful.

Shortly afterward, during a storm, the underpinning at the outer side was washed out, and the outside fell to the bottom of the lake, cutting through the ways on which it rested.

An attempt was then made to raise it for the purpose of putting a bottom in it so that it might be towed out to its place in the lake, but another storm in the meantime racked it so that it had to be taken to pieces to save it.

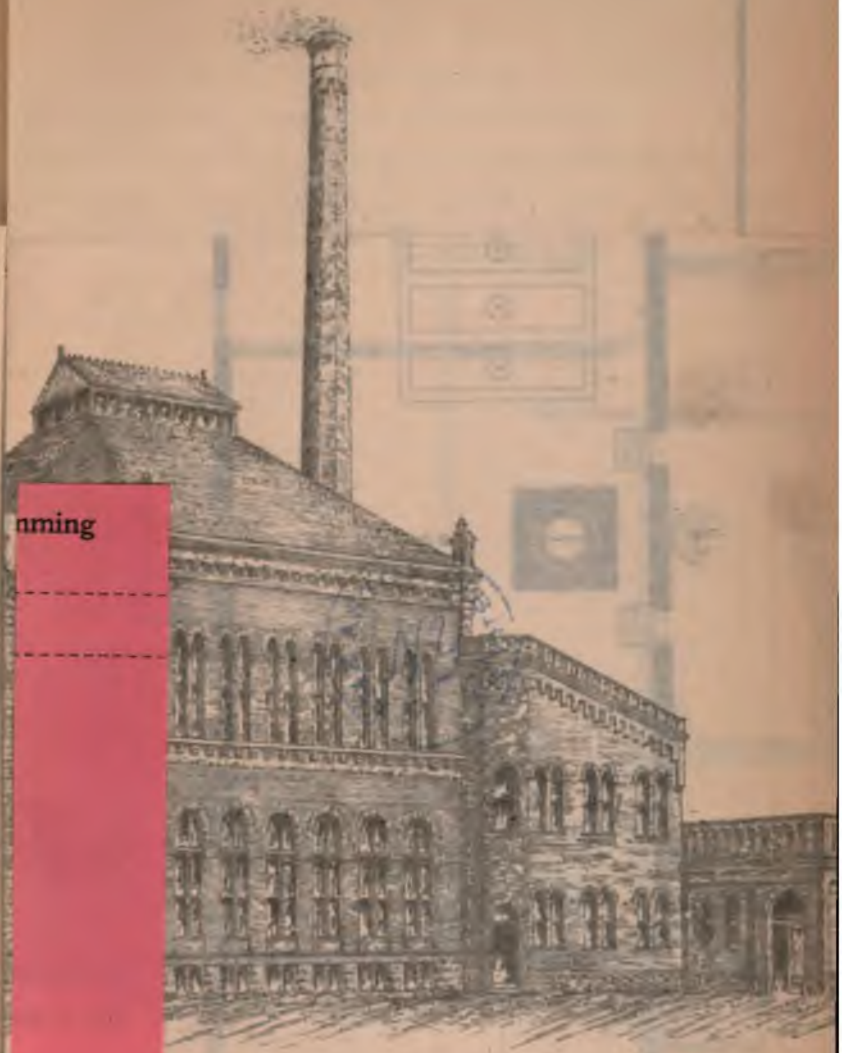
The loss is at the expense of the contractor and not the city.

The contractor is now at work on a new structure for the same place which will probably be ready to launch by the time the ice goes out of the lake in the Spring.

CENTRAL PUMPING STATION.

The sites for new pumping works having been selected by the committee appointed by the Council for that purpose, and consisting of the Mayor, Comptroller, and Commissioner of Public Works, and the ground for the Central pumping station purchased, proposals were received for engines and machinery.

The contract having been entered into on April 13, plans were immediately commenced for a suitable building and foundations, and the work of excavating



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was begun in June. By the middle of July the pit was ready for the foundation piles for the building, but owing to delay in procuring piles no further excavation could be done until about September 1, when work was begun on the pit for engine foundations.

Owing to the soft and yielding nature of the ground (very soft blue clay) extreme care was necessary in bracing, and the work was consequently slow; but by the last of October the bottom was reached.

The intention at first was to use ordinary piles under the engine foundation, but the soft nature of the ground rendered this a dangerous proceeding, and sand piles were resorted to—*i. e.*, rectangular pits, four by eight feet, were sunk to the hard stratum, and filled with sand well rammed in. This work was so far advanced by the middle of November that the footing courses of stone were started, the brick-work following up as the stone-work was finished. By December 31, the entire size of the brick-work had been carried up about twelve feet, and at the present time is up to the level of the foundation of the building.

From present appearances, the foundations and other work will be ready by March 1, to begin placing the machinery.

On September 28, a contract was entered into with Grace & Griffiths for the erection of the building. Contracts were also made for the cut stone, iron floors and roofs.

The building was to have been ready for the engines January 1, and completed April 15, but owing to the necessarily slow progress of the foundation work, the work of erection of the building has been delayed. The contractor is now about beginning his work, so that the completion of the building will be delayed until about June 15.

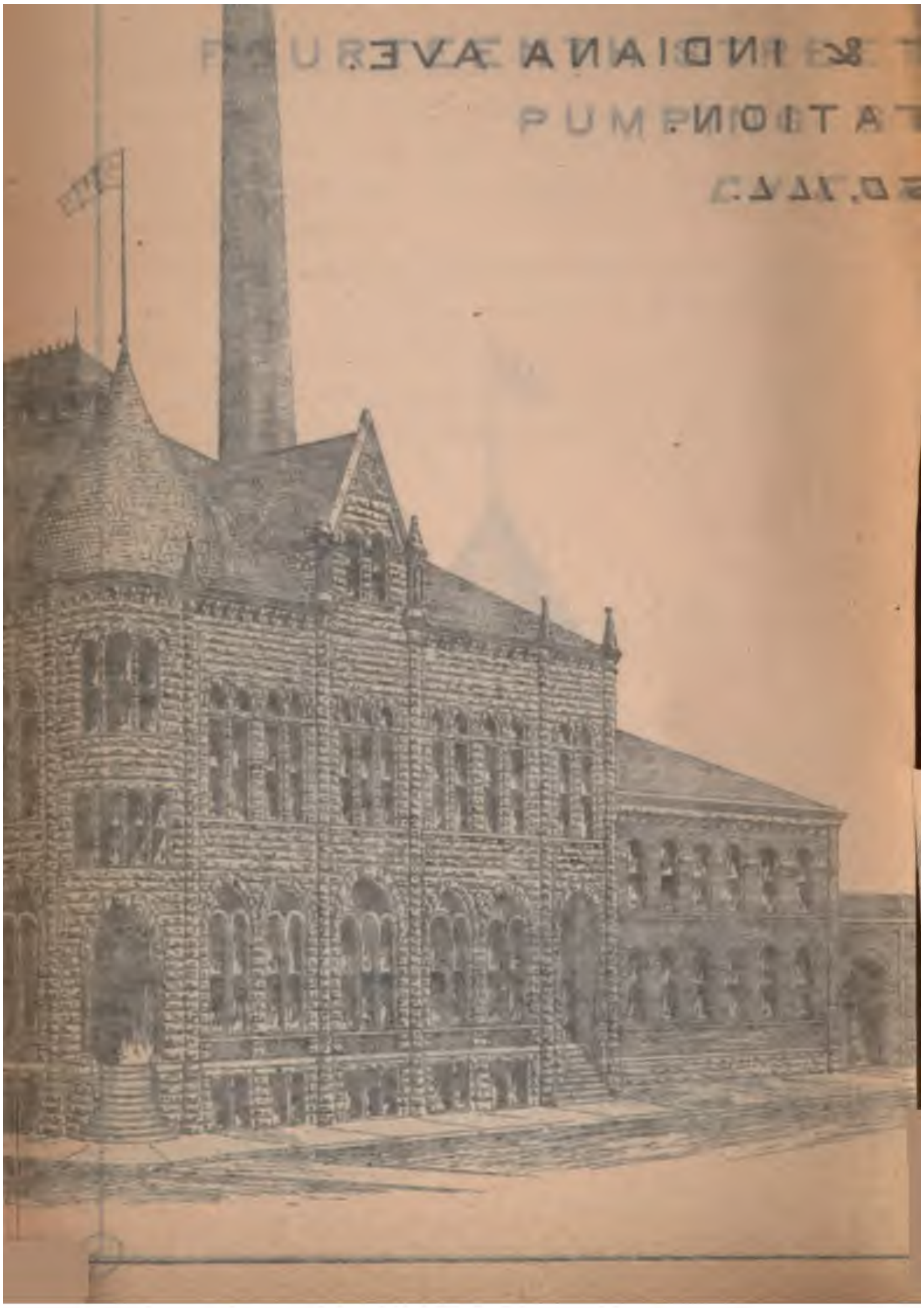
The material for the floors and roofs is all ready for erection, and can be put in place as soon as the mason work is ready for it.

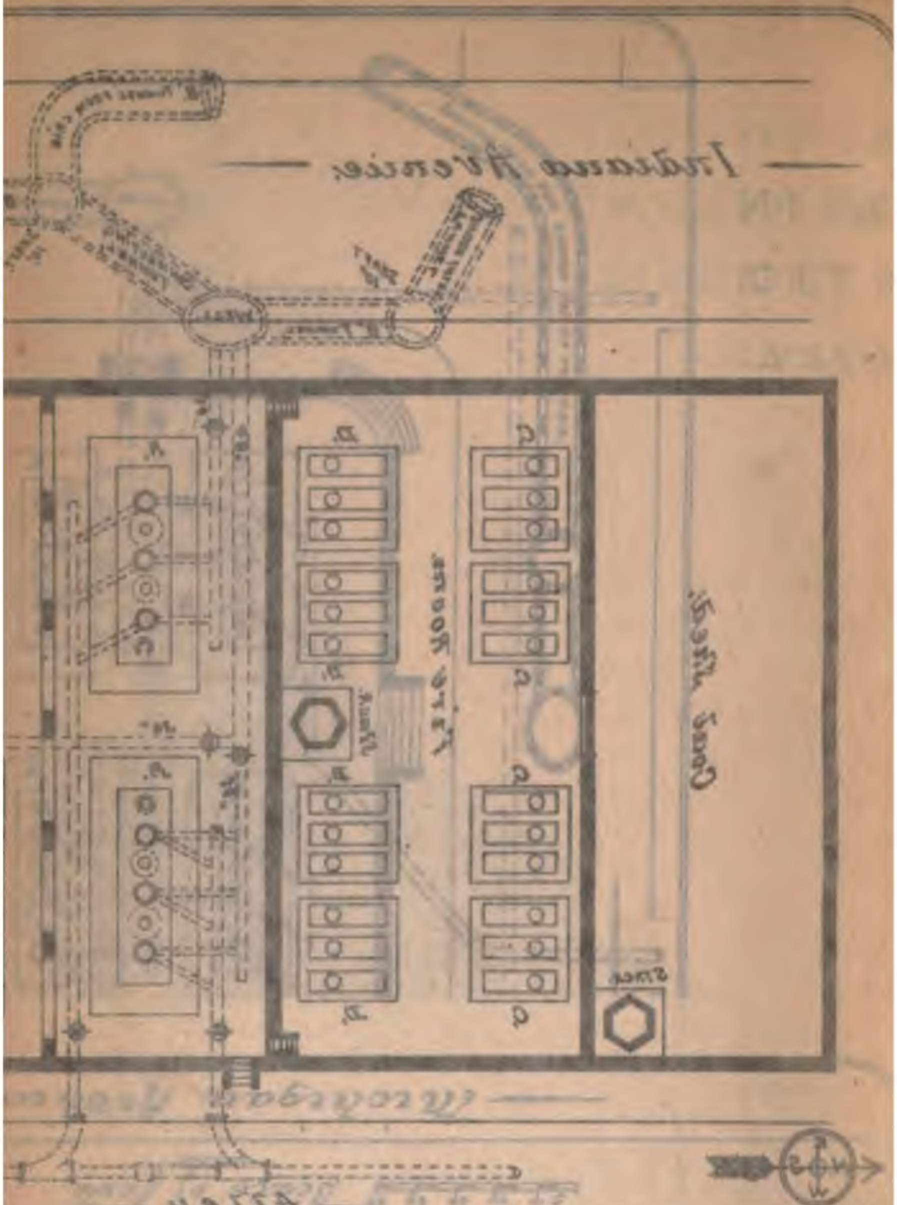
Connection will be made with the old seven-foot tunnel, whereby water will be furnished when the engines are complete.

FOURTEENTH STREET PUMPING STATION.

A site for a pumping station has been purchased on Fourteenth street, between Michigan avenue and the Illinois Central Railroad, general plans decided upon and complete plans well advanced.

A large amount of excavation has been done by the city, and fully one half of the foundation piles driven. At this place the piles under the engine foundations, which are about twenty feet deeper than the building foundation, are driven with a follower,





Explanation.

Pumping Station at Indiana Ave. & 14th St.

A. High Service Engines.
B. Engines for Domestic Service.
C. Boilers for High Service.

and will be cut off at the proper height, and capped when the excavation reaches them. A contract for the building will probably be made early the coming Summer.

OGDEN DITCH DAM.

On May 29, word was received from the watchman at the dam that the flood water from the Desplaines river was cutting a channel to the south of the dam and that the dam itself was in danger.

Mr. Wm. Innes was immediately sent out there with a gang of men and a temporary dam constructed across the new channel, which had cut to a width of about thirty feet and a depth of about ten feet.

Nothing could be done at the time of a permanent character, and later in the season an appropriation was asked, for the purpose of making permanent repairs. The amount estimated for this purpose was $5,000.00.

After examination by the Mayor, Comptroller and Chairman of the Finance Committee, together with the City Engineer, the appropriation was recommended to the Council and granted and the work ordered done.

The work is now about completed and the dam is considered safe against ordinary floods.

QUALITY OF WATER.

The quality of the water has been excellent during the year. Once or twice, in consequence of heavy northerly storms, the water became slightly milky, owing to clay in suspension, from the wash of the bluffs, but in no case has any contaminated or polluted water approached the crib.

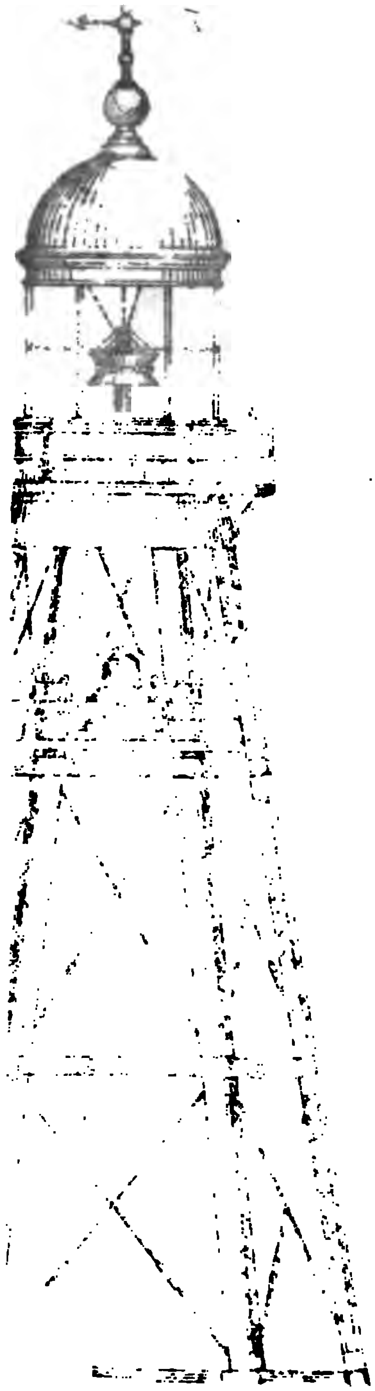
The old tunnels are in good order, and during the past year have been used to their full capacity.

NEW INLET PIER.

This structure, after causing a great deal of tribulation to the contractors, was finally completed in August, '88, and is ready for use in case of necessity.

The iron light tower has in its lantern an electric lamp and reflectors, designed by William S. Chase, of this office, and was constructed by the Wheeler Reflector Co.

The height of the light is sixty feet above the water, and its rays are so brilliant that it is the first light seen from vessels approaching from the northward.



The electric current is supplied from the plant at the North pumping works, through a cable laid in the tunnel.

The cost of this structure has been as follows:

Substructure complete	$51,003 84	
Light house, including lantern	2,490 00	
Reflectors	90 00	
Bell	200 00	
Total		$53,783 84

LAKE CRIB AND BREAKWATER.

The breakwater, designed as a protection to the Lake Crib, was commenced early in the season by the contractor, and on July 30 the first crib was towed out and sunk to its position.

Everything has worked favorably during the construction, with the exception of one heavy storm which changed the alignment of the second crib slightly, and settled the exposed end of it about five feet.

The work was completed in December, and its effects are very perceptible to the occupants of the crib, who now scarcely feel the force of a heavy storm in the living rooms, while before the breakwater was built the crib swayed considerably.

The light tower shakes and sways very badly in a high wind, and its action must be detrimental to the structure. It should be removed, and a light iron structure erected in its place, with an electric lamp in the lantern.

It seems questionable whether it would not be better to close the opening left in the west side of the breakwater with piles and rip-rap, in order to prevent the possibility of running ice forcing its way inside, where it might cause much damage.

The cost of the breakwater has been **$149,430.28.**

BUILDINGS FOR FIRE DEPARTMENT.

The following buildings have been erected for the Fire Department during the year 1888 :

Three-story and basement Fire Engine House at Illinois street, near Franklin street, for Company No. 42. Contractors, Hansen & Wilke. Cost........	$11,895 00
Two-story and basement Fire Engine House at West Lake street, between Kedzie and Albany avenues, for Company No. 44. Contractor, D. H. Hayes. Cost..............................	$8,865 00

Four-story and basement Repair Shop at Sebor street, between Halsted and Desplaines streets. Contractors, Grace & Griffiths. Cost	$13,629 00

In conclusion, I beg to return thanks to you for your courtesy and hearty co-operation in all matters connected with this Bureau.

I also desire to thank the Engineers and other employes of this Bureau for their zeal and attention to their several duties.

Very respectfully,

WM. R. NORTHWAY,
City Engineer.

VESSEL DISPATCHER'S REPORT.

CHICAGO, January 14, 1889.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR:—I herewith present to you my report as Vessel Dispatcher for the season of navigation, commencing April 15, and ending December 1, 1888.

The continued operation of the Bridge Telephone system further develops its usefulness; pilots and bridge tenders having become more accustomed to its workings. The interruption of travel by the opening and closing of the bridges has been reduced to a minimum.

The whistle nuisance has been very materially lessened, and next year will probably be entirely abated. The offenders the past season have been steamers from foreign ports, whose masters are unacquainted with our whistling ordinance.

There are now in winter quarters in the Chicago river, two hundred and sixty-five (265) vessels, of which sixty-two (62) are steam and two hundred and three (203) are sailing vessels. During the winter of 1887-8 three hundred and thirty-one vessels quartered here — a decrease of sixty-six (66) for this winter. The grain-carrying capacity of these vessels is five million, two hundred and sixty-six thousand (5,266,000) bushels — a decrease of five hundred and sixty-two thousand (562,000) bushels over last winter.

Following is a table showing arrivals, clearances and tonnage of vessels at the port of Chicago during each year since 1882:

YEAR.	ARRIVALS.		CLEARANCES.		TOTAL.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
1883	11,203	3,555,586	11,271	3,743,574	22,474	7,299,160
1884	10,513	3,481,957	10,640	3,489,666	21,153	6,971,623
1885	9,846	3,347,647	9,910	3,364,169	19,756	6,711,816
1886	10,180	3,546,309	10,267	3,594,549	20,447	7,140,858
1887	10,828	3,868,465	10,920	3,989,615	21,748	7,858,080
1888	10,158	3,990,921	10,308	4,134,064	20,466	8,124,985

It will be seen that the arrivals and departures have decreased 1,282 over the season of 1887. This is more than balanced, however, by the increase in tonnage — this item showing an increase of 266,905 tons over 1887. The increase is attributable to the higher average carrying capacity of the vessels during the last year.

REPORT OF THE VESSEL DISPATCHER'S OFFICE,

FROM APRIL 17 TO DECEMBER 1, 1888.—BETWEEN THE HOURS OF 7:00 A. M. AND 7:00 A. M.

BRIDGES.

	RUSH.	STATE.	CLARK.	WELLS.	LAKE.	RANDOLPH.	MADISON.	ADAMS.
Number of days in service..........	196	196	196	84	196	195	196	196
	Hrs. Min.	Hrs. Min.	Hrs. Min	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.
Total time open......	693 49	589 16	583 15	198 30	451 59	423 11	414 21	425 22
Total number of vessels passed through	19,941	19,096	18,257	7,434	13,776	13,694	13,581	13,473
Total number of swings............	9,911	9,000	8,140	3,495	7,682	7,784	7,171	7,817
Average number of vessels per day..	101.73 +	97.39 +	93.14 +	88.5 —	70.28 +	70.22 +	69.29 +	68.73 +
Average number of swings per day ..	50.56 +	45.91 +	41.53 +	41.60 +	39.19 +	39.91 +	36.58 +	37.33 +
Average number of vessels per swing	2.01 +	2.12 +	2.24 +	2.12 +	1.79 +	1.75 +	1.89 +	1.84 +
	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.
Average time consumed per vessel...	2 5	1 51	1 55	1 36	1 58	1 51	1 50	1 53
Average time open per swing.......	4 12	3 55	4 17	3 24	3 32	3 16	3 28	3 29
Average time open per hour........	8 50	7 31	7 26	5 54	5 46	5 25	5 17	5 25
Average time open per day...	212 18	180 18	178 30	141 42	138 18	180 12	126 48	130 12
Per cent. of time bridge was closed for public ...	85 9/20	87 3/8	87 11/21	90 19/20	90 3/7	90 13/15	91 9/47	90 67/70
Per cent. of time bridge was open for vessels ...	14 11/20	12 5/8	12 10/21	9 1/20	9 4/7	9 2/15	8 38/47	9 3/70

REPORT OF THE VESSEL DISPATCHER'S OFFICE—CONTINUED.

FROM APRIL 17 TO DECEMBER 1, 1888.—BETWEEN THE HOURS OF 7:00 A. M. AND 7:00 A. M.

	BRIDGES.							
	VAN BUREN	HARRISON.	POLK.	TWELFTH.	KINZIE.	INDIANA.	ERIE.	CHICAGO AVE.
Number of days in service	195	188	92	196	195	196	161	194
Total time open	Hrs Min. 458 7	Hrs. Min. 542 49	Hrs. Min. 242 32	Hrs. Min. 474 7	Hrs. Min. 638 1	Hrs. Min. 258 5	Hrs. Min. 222 8	Hrs. Min. 204 17
Total number of vessels passed through.	13,381	12,941	6,026	13,156	19,086	5,515	4,556	5,470
Total number of swings..............	7,101	6,629	3,335	7,968	8,884	4,260	3,557	4,275
Average number of vessels per day...	68.72 +	68.83 +	65. 5 —	67.12 +	97.87 +	28.13 +	28.29 +	28.10 +
Average number of swings per day...	36.41 +	35.26 +	36.25 +	40.65 +	45.55 +	21.73 +	22.08 +	22.03 +
Average number of vessels per swing	1.88 +	1.93 +	1.80 +	1.65 +	2.14 +	1.29 +	1.28 +	1.27 +
Average time consumed per vessel...	Min. Sec. 2 3	Min. Sec. 2 31	Min. Sec. 2 25	Min. Sec. 2 10	Min. Sec. 2 00	Min. Sec. 2 48	Min. Sec. 2 55	Min. Sec. 2 14
Average time open per swing	3 52	4 54	4 22	3 34	4 18	3 38	3 44	2 52
Average time open per hour.........	5 52	7 13	6 28	6 2	8 10	3 17	3 26	2 38
Average time open per day...... ..	140 54	173 12	158 6	145 6	196 18	79 00	82 42	63 6
Per cent. of time bridge was closed for public . .	$90\frac{6}{28}$	$87\frac{12}{13}$	$89\frac{3}{8}$	$89\frac{12}{14}$	$86\frac{1}{28}$	$94\frac{7}{14}$	$94\frac{5}{20}$	$95\frac{8}{13}$
Per cent. of time bridge was open for vessels....	$9\frac{22}{28}$	$12\frac{1}{13}$	$10\frac{5}{8}$	$10\frac{2}{14}$	$13\frac{27}{28}$	$5\frac{7}{14}$	$5\frac{15}{20}$	$4\frac{5}{13}$

REPORT OF THE VESSEL DISPATCHER'S OFFICE,

FROM APRIL 17 TO DECEMBER 1, 1888.—BETWEEN THE HOURS OF 8:00 A. M. AND 9:00 P. M.

BRIDGES.

	RUSH.	STATE.	CLARK.	WELLS.	LAKE.	RANDOLPH.	MADISON.	ADAMS.
Number of days in service..........	196	196	196	84	196	195	196	196
	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.
Total time open	485 52	399 37	416 4	151 54	345 16	327 46	319 43	329 45
Total number of vessels passed through........	14,866	14,517	14,102	5,983	10,932	10,854	10,783	10,754
Total number of swings.............	6,566	6,043	5,083	2,472	5,638	5,723	5,188	5,476
Average number of vessels per day...	75.34 +	74.06 +	71.94 +	71.22 +	55.77 +	55.66 +	55.01 +	54.86 +
Average number of swings per day ..	33. 5 —	30.84 +	25.93 +	29.42 +	28.75 +	29.34 +	26.46 +	27.98 +
Average number of vessels per swing	2.26 +	2.40 +	2.77 +	2.42 +	1.93 +	1.89 +	2.07 +	1.96 +
	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.
Average time consumed per vessel...	1 58	1 39	1 46	1 31	1 53	1 49	1 46	1 50
Average time open per swing	4 26	3 58	4 55	3 41	3 40	3 26	3 41	3 37
Average time open per hour.........	11 26	9 25	9 47	8 20	8 8	7 45	7 31	7 46
Average time open per day.........	148 42	122 18	127 18	108 30	105 36	100 48	97 48	100 54
Per cent. of time bridge was closed for public ...	$80\frac{18}{19}$	$84\frac{8}{35}$	$83\frac{13}{15}$	$86\frac{7}{78}$	$86\frac{9}{19}$	$87\frac{3}{50}$	$87\frac{37}{78}$	$87\frac{4}{78}$
Per cent. of time bridge was open for vessels ...	$19\frac{1}{19}$	$15\frac{27}{35}$	$16\frac{2}{15}$	$13\frac{71}{78}$	$13\frac{10}{19}$	$12\frac{47}{50}$	$12\frac{41}{78}$	$12\frac{74}{78}$

NOTE—This table and its continuation on page 145, includes the busiest hours of the day. All bridges are closed between 6 and 8 A. M. and 5 and 7 P. M.

REPORT OF THE VESSEL DISPATCHER'S OFFICE—CONTINUED.

FROM APRIL 17 TO DECEMBER 1, 1888.—BETWEEN THE HOURS OF 8:00 A. M. AND 9:00 P. M.

	BRIDGES.							
	VAN BUREN.	HARRISON.	POLK.	TWELFTH.	KINZIE.	INDIANA.	ERIE.	CHICAGO AVE.
Number of days in service	195	188	92	196	105	196	161	194
	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.	Hrs. Min.
Total time open	342 13	415 38	191 10	368 58	500 5	221 27	194 26	179 36
Total number of vessels passed through	10,717	10,373	4,880	10,545	15,728	4,753	3,990	4,789
Total number of swings	5,310	4,967	2,565	6,268	6,800	3,717	3,101	3,752
Average number of vessels per day	54.95 +	55.17 +	53.04 +	53.80 +	80.65 +	24.25 —	24.78 +	24.68 +
Average number of swings per day	27.23 +	26.42 +	27.88 +	31.97 +	34.87 +	18.96 +	19.26 +	19.34 +
Average number of vessels per swing	2.02 +	2.08 +	1.90 +	1.68 +	2.31 +	1.27 +	1.28 +	1.27 +
	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.
Average time consumed per vessel	1 56	2 24	2 21	2 5	1 54	2 47	2 56	2 15
Average time open per swing	3 55	5 1	4 28	3 32	4 25	3 34	3 47	2 52
Average time open per hour	8 13	10 12	11 31	8 41	11 50	5 25	5 37	4 16
Average time open per day	106 48	132 36	124 36	112 54	153 48	67 42	73 00	55 30
Per cent. of time bridge was closed for public	$86\frac{5}{15}$	$82\frac{35}{36}$	$80\frac{12}{14}$	$85\frac{20}{38}$	$80\frac{4}{15}$	$91\frac{8}{25}$	$90\frac{13}{20}$	$92\frac{11}{12}$
Per cent. of time bridge was open for vessels	$13\frac{10}{15}$	$17\frac{1}{36}$	$19\frac{2}{14}$	$14\frac{18}{38}$	$19\frac{11}{15}$	$8\frac{17}{25}$	$9\frac{7}{20}$	$7\frac{1}{12}$

There came into commission this year fifty (50) first-class steamers, averaging fifteen hundred (1,500) net tons, the greater number of which have come to Chicago and entered the grain trade.

I would recommend that the telephone system be extended to include Eighteenth, Twenty-second and South Halsted street bridges, thereby giving the Vessel Dispatcher more and better control of the movements of vessels. Having no telephone connection with the bridges south of Twelfth street, it frequently occurs that the bridge located at this point is opened to allow one vessel to pass north, while other vessels are also moving north between South Halsted and Twelfth streets. There being no telephone report of the movement of these vessels, they are allowed to pass, making two or more openings of bridges from Polk to Wells streets, when, with the extension of the system as proposed, one opening of the bridges would answer.

I would also recommend that the river police be increased in number so as to rigidly enforce the law forbidding the throwing or dumping of refuse, offal, fruit, vegetables, slops from distilleries, and coal tar from the gas works into the river.

I would further recommend that Section 985 of the Municipal Code be revised, so as to give the Vessel Dispatcher the power to hold vessels more than ten minutes where the street traffic demands it.

The electric light system on the river has been a great help to navigation during the past season, which is proved by the fact that in numerous instances tugs with heavy tows and steamers proceeding without tugs have tied up until daylight after reaching the limits of the electric light plant. It is also of much benefit to the fire and police departments in having the docks well illuminated.

The electric light and telephone systems have proved themselves of great service to the public and marine in preventing the larger lake carriers from meeting at dangerous places in the river, and consequently saved the public, and smaller vessels as well, the unnecessary loss of time and money occasioned by such delays.

Respectfully submitted,

JOHN C. WECKLER,
Vessel Dispatcher.

REPORT

ON

Water Works System

CITY OF CHICAGO.

WATER WORKS SYSTEM.

GENERAL REPORT.

CHICAGO, January 1, 1889.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR:—Almost my first work, after being placed in charge of the water works system of the city, was to make a detailed report to you of the condition of the several pumping stations. I herewith respectfully submit a comparative report of the workings of the pumping machinery at the time I was placed in charge and the present time.

At Fullerton avenue conduit the engines were doing their work satisfactorily. A six months' test of oil as a steam generator was being made there at the time. The burning of coal was afterwards resumed, it being found the least expensive. The city lost nothing by the test, as the price of the oil was reduced to the amount coal would have cost.

At the Bridgeport canal pumping station the four engines were at work, but several of the wrought iron cranks on the engine-shafts were broken and temporarily repaired, until such time as more extensive repairs could be made.

At the West Side water works I found the four compound-beam engines all in working order; but a heavy trembling of the floor of the engine-room was perceptible. At the time, I ascribed this to a weak construction of the floor beams. The boilers were said to be in a fair condition, but were undergoing repairs when not in use.

At the North Side water works I found a very unsatisfactory state of affairs. The pumping engines in use at these works were built and placed in operation at various periods, as the demand required, between 1853 and 1887.

The oldest, a single-beam engine of 1853, appeared to be almost worn out. The column supporting the beam, was shaking and vibrating with every stroke of the piston, and the four wrought iron braces were bending and stretching with the shaky column, making the floor tremble perceptibly. The valves in the pumps made a loud knocking report with every change.

The second, a single-beam engine of 1857, was in a somewhat better condition, and was considered one of the best in the building. Both these engines were working during the day. Their bad condition was said to have been caused by the great fire which, in 1871, partly destroyed the building and sprung some parts of the machinery.

The third, a small double-beam engine, built in 1867, was undergoing repairs. The water-pumps had been re-bored, new pump-pistons put into place, and the valve-gear on the steam-cylinders overhauled. The work was so nearly finished that I had no time to examine all details before the engine was again at work.

The fourth engine was built in 1872. This is the large double-beam engine in the south end of the building. Its cylinders are of seventy-two (72) inches diameter, ten (10) feet stroke with bucket and plunger pumps originally fifty-seven (57) inches diameter of bucket, forty (40) inches diameter of plunger, ten (10) feet stroke, and should furnish about 36,000,000 gallons of water in twenty-four (24) hours. Its working struck me as peculiar. The weight of all the machinery seemed to hang on one end of the walking-beams; the down-stroke of the steam-pistons was quick and the up-stroke rather slow. The whole building was trembling on account of this uneven motion. The engine-frame itself was shaking so that the platform around the beams was a very unsafe foothold for the engineers and oilers. The upper rooms in the building were useless on account of the trembling, but the engine had to be kept going day and night to supply the city with water.

In an annex to the main building are located the newest engines—two pairs of the Gaskill manufacture, built in 1886. They began pumping in 1887, and at the time of my examination were apparently working well. An official test had just been made on them, and, as it had not yet been reported, I did not examine them particularly.

It is pertinent here to mention an incident which happened shortly after my arrival in Chicago. Turning the faucet in my room at the hotel, the water was thrown out with great force. It was propelled by a large quantity of compressed air in the pipes, and was fairly blown out of the wash-bowl by the force of the air behind it. Filling a glass with the water, I found that it looked perfectly white, but as the air escaped it became clear.

At the time, I supposed the hotel pump was responsible for the disorder in the water-pipes and thought no more of it. During the day, I made my first visit to the North Side water works. I there saw several air-compressors in operation, which the engineer in charge told me were necessary to make the engine work quietly, by forcing air into the water-pumps. My experience with the hotel faucet came to my mind, and I commenced to investigate.

I knew that all pumping engines required a small quantity of air to keep the air-chamber on the discharge-pipe supplied with its proper quantity. This is necessary, as the air, under pressure, somehow works out of the air-vessel, either through the small pores in the cast-iron, or through other leaks, causing the engine to thump. This air can be easily introduced through a small pipe with check and regulating valves on the suction side of the pump, or a small force-pump may be used to supply the air-chamber direct with air, for an air-cushion. It is also a fact, that in cases where air enters the valve-chamber with the supply of water, a quiet working of the pump and of the valves is impossible. But I never had seen regular air-compressors used, or air in such quantities forced under pressure into water-pumping engines, and naturally I was interested to find the reason for it.

A few days later the double-beam engine of 1867 was started up again and it seemed to work all right; but for some reason the engine looked as if it did no heavy work. It worked too easily. A try-rod over one of the discharge-valves in the pump-chamber showed plainly that the valves did not close quickly enough at the end of the stroke. It required quite a little time for closing, even after the pump-piston was again on its down stroke. Much of the water ran back from the main into the pump, and from the pump into the well. I found, on inquiry from the engineers at the works, that the valves in these pumps had been changed several years since, and that valves similar to those in use in the big "'72" engine were substituted for the old ones.

In the basement of the engine-house were stored a number of brass double-beat valves, which had been removed from the "'72" pumps in 1877-78, when new valves of a different construction were put in. On further investigation I found the patterns of these new valves, which disclosed at once the fact that they could not work — for reasons which I will explain hereafter.

In the meantime the engines were all working at their full speed. Every faucet in the engine-house discharged more air than water, as appeared to be the case all over the city.

One morning early I saw a man working at a hydrant, and found he was trying if it had frozen during the cold night. On hearing the air blow out of the try-cock, he was satisfied. He tried it again for me and I explained how the air would force the water back from the hydrants if they were not in constant use. The only real benefit from the air in the water appears to have been that it kept the water from the hydrants and thereby prevented their freezing and bursting.

The air in the water was a great detriment in case of a fire. More air than water came from the hose, and it was impossible for the engines to throw a solid stream of water at any time. The air-vessels on the fire-engines were often ruined by the undue quantity of air coming from the hydrants. It had been explained that this difficulty arose because the water could not follow the rapid workings of the pump-pistons on the fire-engines.

I learned that many complaints had been received of lack of water in upper stories, of noise in the pipes at night, and that a loss of over twelve pounds of pressure existed between the North Side pumping station and the immediate neighborhood west of the tower, after the water had passed the tower.

Investigating this, I found in the pamphlet "Preliminary Report of the Drainage and Water-supply Commission of the City of Chicago, of January, 1887," page 40, a diagram, showing the water pressures in the Chicago water-mains in December, 1886. Thereon is shown a decidedly lower pressure in the pipes west of the tower. The reason given—that the complex arrangement of the delivery pipes on the pumps at the North Side and the small area of the pipes caused this – is not correct.

It may have caused some of it ; but the greater loss of pressure was because a part of the air, which was forced into the pumps artificially in the engine-house, escaped through the open stand-pipe when the water was passing below. The balance of air in the water was passing along in the water-mains and accumulated in the upper ends of the pipes in houses, hydrants etc., and caused the rattling noise in the water-pipes at nights, or the spurting through open faucets. The escaping air through the stand-pipe caused the water to foam so much that the foam at times ran over the top of the pipe, the air blowing out at the top with force. This caused the pressure to fall west of the tower, as the pressure of air in the water showed on the gauge as if it were water, and on having escaped, reduced the pressure to that extent.

This explains also the freezing of the tower about seven years ago. The foam froze to the sides of the pipe and gradually closed up the free opening. The air could not escape and the city mains contained more air than water. The tower had to be thawed out with fire-pots, and when at last the air could escape, it made the tower tremble for hours.

Another circumstance seemed to favor me in my investigation. A defect in some of the air pump valves on the large " '72" beam-engine made it necessary to shut this engine down, and the next morning the work of taking it apart for general repairs was commenced. The air-compressors were also stopped when the big engine ceased to run.

The effect of losing such a vast amount of water as it was supposed the large engine was furnishing was hardly noticeable. On the contrary, there was less air in the pipes, and the water was more solid ; but by no means was all air excluded from the engines which were still working. The " 1867 " engine had a number of pipes attached to the valve chambers, they being considered necessary to the working of the pumps. One of them, an eight-inch diameter pipe, as was found out later when removing it, had a number of check valves in it. These were perforated and produced a water white as milk, caused by the water being churned thoroughly with air drawn into the suction valves of the pump and mixed with the water in these auxiliary pipes. The old beam engines had also air pipes attached to their pumps to supply all air possible for the air vessels, and to make the pumps work smoothly. The air vessels were full of air to the bottom, and the superfluous air was forced with the water into the city mains. Nothing but the usual amount of wear and tear on the valve motion and on the connections of the "'72" engine was found. Only the rubber valves for the air pump needed to be replaced by new ones.

The pump well was pumped out and the pumps examined. The suction and discharge valves of the service pumps were in good order and perfectly tight. The wooden seats of the valves were as perfect as they probably were when put in nine (9) years before,—but we found the pump barrels of both pumps cracked from top to bottom, and a new inside cylinder or sleeve inserted in each pump. The original diameter of the pumps had been fifty-seven (57) inches, now they were fifty-four (54) inches. The space between the new cylinder and the old cracked pump cylinder was filled with sulphur, and the inside cylinder held in position by set screws. A small iron band was clamped around each of the broken cylinders. A ring over the top and at the bottom of the pump cylinder, with four rods on the outside of the old cylinder kept the inside sleeve in place.

I found later from the bills on file that these inside cylinders were put in the pumps in the early part of 1879, but no official report of the accident to the pumps can be found in the yearly reports, or when these repairs were found to be necessary, or what caused the pumps to burst.

But it is plain how it must have happened. When the new valves were placed in the pumps in 1878, and the engine was started, it was found the valves would not work. The pump well was nearly full of water when the gates were open to the tunnel from the lake, and the suction valves were so low down that the pressure outside of the pump would not let the valves seat. To make them seat, the gates were partially closed so that the water in the well could not rise so high; and at some time the water must have gone too low. Air came into the pumps through the suction valves, and the buckets of the pump on their down stroke hit the water in the pump cylinders in mid-stroke and burst both pump barrels at once. Each is cracked in identically the same way. The pumps were kept going, and the loss of water from the mains through the open cracks was so great that the pumps were shut down for investigation. The state of affairs was then discovered,—but nothing was said about it in the official reports.

After the engine was repaired, new means had to be used to make the pump valves work. The pounding of the valves is said to have been terrible. The air-cushion was now brought into requisition. At first a small quantity of air was used. This was gradually increased, as is plainly seen from the official reports, of which I will quote extracts later, referring only to this big "'72" engine.

I found at the North Side water works several air compressors for this purpose. One duplex double-acting machine with two (2) air cylinders, each 9½ inches diameter, eight inches stroke, running usually eighty (80) revolutions per minute, and could furnish about one hundred and five (105) cubic feet of air at atmospheric pressure; another with two (2) cylinders, which at forty (40) double strokes per minute could furnish about thirty (30) cubic feet of air; and a third one which could furnish about fifty (50) cubic feet of air per minute. This last one was used as a water pump, when the well had to be pumped dry. When the "'72" engine was running, it was employed to pump air for the engine.

The three pumps together could easily furnish two hundred (200) cubic feet of air at atmospheric pressure per minute. This was pumped into a receiver under a pressure of twelve (12) pounds above atmosphere, and from this receiver the air was led by means of pipes into the suction valve chambers of the pumps.

Later on, a drawing was found among the old papers in the office of the water works, which shows plainly the intended improvement in pumping engines, and which dates back as far as January, 1877. When it was plain beyond a doubt that all the trouble had been caused by the misconstructed valves in the pump chambers, new valves of a different construction were ordered and made, and placed in the pumps. In the meantime the whole engine itself was overhauled.

Many queer things were discovered while this work was going on. A six-inch nozzle and valve were on the delivery main for the purpose of being opened to let the water run back into the pump well from the water mains, when the pressure became too great. The water was pumped up to let it run back! The general marched up the hill and then he marched down.

But it was a hazardous thing to stop the big engine, and it had to be kept going. It required five or six men to handle the starting bars and adjust the cut-off when the engine was started. Then the air-compressors had to force air into the valve-chambers to cushion the valves of the pump. I was told that on several occasions it took a day or more to accomplish this.

The engine was always running away when the heavy pistons and pump plungers on their down strokes made the whole building tremble, because there was air alone below the buckets to balance the load. On the natural air pipes some of the check valves were placed with the wrong end toward the pump. The natural consequence was that they spouted out water instead of drawing in air, and the regulating valves had to be kept closed.

Each pump had a thirty-six inch discharge pipe; but outside of the building these two pipes had been drawn together into one pipe of the same diameter only, which had a bad effect upon the free discharge of the water from the pumps. During the repairs of the engine, a new connection was made from the south engine discharge pipe to the twenty-four inch main leading through Pine street, thus relieving the contracted pipe and the engine from any bad back pressure.

A similar state existed on the "'67" double engine. Each pump had a twenty-eight inch delivery pipe, connected to one pipe of the same size inside the building, causing a back pressure of about four (4) pounds. A new twelve-inch connecting pipe is now laid from the air chamber below its water-line to the delivery pipe of the "'53" engine, and a great part of the back pressure consequently removed.

On the "'72" engine, there has been put on each pump an eight-inch pipe with an eight-inch gate-valve, which connects the space above the discharge valves with the suction valve chamber for the purpose of starting the engine easily. The pressure of water above the discharge valves is brought below the same and the pump bucket is easily started on the up stroke in both engines by letting steam slowly below the steam pistons in the cylinders. As soon as the engine is moving, these by-pass valves are gradually closed and the suction valves supply the necessary water to fill the pump.

A simple arrangement for keeping the throttle valve in the steam pipe under perfect control, when the engineer admits steam into the steam cylinders, has changed the difficult starting of the engine into an easy task. The fact that water instead of air now fills the pumps, makes the running away of the engine at the start impossible.

On May 29, the big engine was ready to be started again, after new valves had been placed in the pumps. The pumps worked noiselessly and the engine itself has since been running very well without the use of any of the air compressors. When the big engine started to pump, the water rose in the tower nearly thirty (30) feet. This made the two single-beam engines stop running, as they were not able to pump against such a head of water.

It is not well to have such large engines, supplying 32,000,000 to 36,000,000 gallons of water, where the pumps force the water direct into the mains and not into a reservoir. Should such an engine stop suddenly, the difference of supply is too great, and a serious accident may be caused by it to the other engines.

During the summer, when the capacity of the pumping engines was tried nearly to their full power, an intended change of the "'67" double-beam engine to a compound-beam engine could not be undertaken, but as soon as cooler weather set in, this engine was stopped for the change. In the meantime, the old "'53" engine had to be overhauled, as it was working so badly that it would not do to run it longer. The metal flopper valves in the buckets and in the suction-valve plates of the water pumps were removed, and new brass valve plates with small rubber valves, substituted. The braces on the column which carries the beam, have been supplied with turnbuckles, to keep tension on the braces and prevent the column from rocking. By these changes, this engine has been improved so that it is working better than at any time before. It is noiseless and the pumps work perfectly. The engine can now more easily make twelve (12) or thirteen (13) revolutions per minute than it previously made eight (8).

New valves, similar to the ones made for the pumps of the "'72" engine, were already placed in the pumps of the "'67" engine, and improved the working of the pumps considerably. This "'67" engine was a double low pressure condensing beam engine. It had two steam cylinders of forty-four (44) inches diameter each, eight (8) feet stroke, and used steam of from twenty (20) to twenty-two (22) pounds pressure above atmosphere. One of the large boilers, twelve (12) feet diameter, which had been generating steam for this engine, had been condemned as unsafe to carry even such pressure. After it had been removed, two new horizontal tubular boilers of five (5) feet four (4) inches diameter, and eighteen (18) feet length, with sixty (60) four-inch tubes were placed in the boiler house. They have been constructed to carry 100 pounds pressure above atmosphere. This steam was to be used to supply the "'67" engine after it was changed to a compound engine.

The furnaces under these new boilers burn soft coal, which, by using the Murphy self-stoking device, make as little smoke as the other furnaces, burning hard coal. Ever since these boilers were ready for use they have supplied steam for the low pressure engines, and we have demonstrated that for every ton of soft coal thus used, one ton of hard coal has been saved, which makes a saving of nearly $3.00 per ton of soft coal burned.

A twenty-six inch diameter steam cylinder has been placed inside the forty-four inch cylinder; a new bottom and a new top have been made to receive and hold the small cylinder and a new steam piston for the same. These are all the new parts made for the compounding of the old engine, besides the necessary steam pipes to carry steam from the new boilers to the engine, and the exhaust pipes from the high pressure to the low pressure engine. The space between the twenty-six inch and the bore of the old forty-four inch cylinder, which surrounds the small cylinder, is made a part of the receiver. All other parts of the old engine such as steam chests, side pipes, valves and the whole valve gear, were used without change, and the air pump, driven by this engine, was disconnected. When this compound engine is running, the steam pressure on the new boilers is raised to eighty (80) or ninety (90) pounds above atmosphere, and when the engine is stopped, the steam pressure is lowered again to twenty (20) or twenty-two (22) pounds, and is used for the low pressure engines. The soft coal furnaces are kept in operation, thus saving on the hard coal.

Referring now to the cause of trouble on the large "'72" beam engine, the wrong construction of the pump valves put in during 1877–'78—let us compare these new valves with the old ones. When this "'72" engine was built, fifteen double-beat valves of brass were furnished for the suction chamber, and twelve (12) valves of the same size for the discharge chamber of each pump. The valves were constructed in the usual way—lower diameters of valve seats $15\frac{5}{16}$ inches and $16\frac{1}{2}$ inches, upper diameter of valve seats $12\frac{9}{16}$ inches and fourteen (14) inches. Each valve had 30.15 square inches of ring surface for lifting and 89,875 square inches for floating or resisting to close. Each valve weighed seventy-five (75) pounds in air, or sixty-six (66) pounds when submerged in water, requiring nearly two (2) pounds of vacuum per square inch for lifting, if there were no head of water in the well to help lift them. A number of these valves were yet stored in the building in the early part of this year. These valves probably worked noisily, but well enough to fill the demand, as the official test of the engines was made with them in their places. The Citizens' Association afterwards made a test on December 12, 1874. At that time the engine developed 1,339,951 horse-power, pumping water against a head of 150 feet, the pumps working at the rate of 38,771,976 gallons in twenty-four hours, being $7\frac{1}{16}$ per cent. in excess of the contract requirement. The engines, however, were not used for this extreme work. The head was reduced so that the engine afterwards used only 669,276 horse-power to do the work.

The brass valves were for some reason taken out of the pumps and new valves placed in them. This did not improve the working of the pumps. The new ones were double-beat valves of cast iron, with wooden seats. The clear opening of the fifteen (15) suction valves was 657.9 square inches less, or 28.4 per cent. less than the opening in the old valves. Each valve had a lower diameter of valve seats of $15\frac{1}{16}$ inches and $17\frac{5}{16}$ inches and an upper diameter of valve seats of $8\frac{11}{16}$ inches and $10\frac{9}{16}$ inches, or a ring area of 90.57 square inches for lifting and 175.67 square inches for floating. Each valve weighs 122 pounds in air or 105.12 pounds under water and requires only 1.16 pounds of vacuum for lifting, against two (2) pounds on the old valves. The weight to close the valves under water was only 0.59 pounds per square inch, against 0.73 pounds for the old brass valves. The area of lower inside diameter of valve bell in proportion to the clear opening at top of valve bell was, on the old brass valves, 181.15 square inches to 90.36 square inches, or as 100 : 49, while the same on the new cast-iron valves was 178.19 square inches to 38.9 square inches, or 100 : 21.8. This large ring area of the valve bell, with only 0.59 pounds weight per square inch for closing, acts like a parachute and keeps the valve suspended or floundering in the water instead of letting the valves seat quickly when the bucket of the pump arrives at the top of its stroke. This caused the valves to set heavily after the pump-bucket had started on its down stroke, the current of water passing through the yet open valves backward, carrying the valves down with force. If the pumps take solid water, and the valves are made in such a way as to automatically adjust their lift, necessary to let the water follow the bucket, and close gradually by the time the bucket is at the end of the up stroke, the valves will make no noise and the pump will do its full duty. On double-beat valves the difference between the lower and upper valve faces should be as small as possible —enough only to let the vacuum, formed by the bucket moving away from the valves, lift the weight of the suction valves easily so that the water can enter through the valves. The weight of the valves must be great enough to act continually, so that the valves may be seated as soon as possible after the speed of the bucket diminishes. This prevents any thumping of the valves and any loss of water by running back through the floating valves.

The apparent effects of the introduction of air into the pumps at the suction ends were, that the pumps worked more easily and the valves more quietly. But the new West Side pumping engines had commenced to pump at about that time into the city mains, or a deficit in the quantity of water would have been easily detected.

But let us see how it worked: The water in the well outside of the pump stands about eight (8) or ten (10) feet above the suction valves, or it would exert a pressure against the bottom of the valves to open them, of about four (4) pounds to the square inch. The weight of the valves was only 0.59 pounds to the square inch, which would leave 3.41 pounds of pressure to open them and would float the valves until the pump was filled nearly level with the water outside. But air of twelve (12) pounds pressure above atmosphere was forced into the suction valve chamber, which kept the valves down. The buckets are fifty-four (54) inches in diameter with ten (10) feet stroke. The capacity of each pump is, therefore, one hundred and fifty-nine (159) cubic feet. Each pump received about one hundred (100) cubic feet of air at atmospheric pressure, and if the pump made ten (10) strokes per minute, would give ten (10) cubic feet of air for each suction of the pump, and this amount of air had to expand before any water could be drawn up above the level of the water outside of the pump barrel. The pump could not fill with water on account of this air. The valves, on account of their small weight per square inch, and on account of their small opening at the top, floated and could not seat quickly enough. The bucket descended and compressed the air slowly, while a part of the water in the barrel ran back into the well through the still open valves, which only closed slowly during the increased velocity of the bucket on its down stroke. When the valves closed, no jarring was felt, on account of the air-cushion above the water in the pump-barrel. The air was now further compressed and forced into the mains with the water through the delivery valves. A new up stroke commenced; more air came in from the receiver and compressors and the same operation was repeated, as before.

The loss of water must have been immense. This had been going on for ten years, or, from the early part of 1878 to 1888. The engine had been kept going continually with only a few days of rest in each year, as can be seen from the yearly reports.

But the alleged marvelous performance of this big "'72" engine was at last seriously doubted. The quantity of water used in the city per capita was enormous. The quantity of water pumped was more than the tunnels could furnish.

The report for 1887 says: "This double engine '1872' has been credited with running 8,674$\frac{10}{60}$ hours last year, and with making 4,680,987 revolutions, pumping at 2,245 gallons per revolution, or 10,522,285,815 gallons. From observations recently made and reported, it appears that this estimate is very much too large; and from later observations our mechanical engineer is doubtful if the engine is adding much, if anything, to the city's water supply."

According to this report, the engine was run 8,674 hours, or three hundred and sixty-one (361) days during 1887. Every day there were burned twenty-four (24) tons of hard coal to supply steam. This coal, at

$6.25 per ton, cost $150 a day or $54,150 for the year's work. During the nine years the engine has been in operation the coal bill has amounted to $487,350! And for this but slight benefit has been received. This amount does not include the salaries of engineers or firemen, cost of repairs, or any other expense connected with the running of the engine or the damage caused by the nonsensical use of air in the pumps.

The amount of water supposed to be pumped by the combined engine power of the North Side and West Side water works January 1, 1888, was about 130,000,000 gallons daily. Supposing the population of Chicago to have been at that time 700,000, this would make a daily consumption of nearly 200 gallons per capita — a very large amount as compared with other cities.

In spite of this apparent abundance, complaints of the scarcity of water were loud and continued. The pressure was so small that hardly a second story in the city was supplied with water. Those living in third stories and higher had no water whatever from their pipes unless forced up by an engine in the building. Everyone was put on a short allowance as far as was practicable. Water for sprinkling streets, lawns and gardens could only be had at certain hours and under certain restrictions.

After the large engine was repaired and running, I made a comparison of two months of the pumping last year, 1887, with two months of this year, 1888. The time the computation was made last year was between August 15 and October 15, in order to include the work of the two Gaskill engines which had been started a short time before. The two months in 1888, during which a computation was made, were between June 15 and August 15, when more water is used than during any other two months in the year. You will notice from the figures that the engines at the North Side plant worked considerably less this year than last. The "'57" single-beam engine did not run at all, or made 85,402 revolutions less; the "'67" engine made 51,817 revolutions less; the "'72" engine made 13,506 revolutions less, and the Gaskill engines made 195,112 revolutions less. This resulted (reducing the quantity to a volume in gallons) in the pumping of 250,501,220 less gallons of water during the two (2) months of this year. The consumption of coal was two hundred and sixty-seven (267) tons less, which, at $6.27 per ton, reduced the expenses in fuel $1,674.09 in these two months.

The four engines at the West Side water works ran faster during the two (2) months this year, making together 633,630 revolutions more and giving an increase of 2,689,363,916 gallons over an equal time in 1887. They consumed five hundred and seventy-three (573) tons of coal more, which, at $3.30 per ton, added $1,890.90 to the expenses in fuel there.

Deducting the $1,674.09 saved at the North Side water works, the cost for the greater quantity of 2,438,862,696 gallons is only $216.81 or 8.8 cents for every 1,000,000 gallons above the imaginary quantity of water pumped during the two (2) months of last year.

I need not tell you that the supply of water during this summer has been abundant and satisfactory to the citizens.

Taking into consideration the facts that there were laid from August 1, 1887, to August 1, 1888, 217,170 feet of water mains, in sizes from four to sixteen inches; that from October 1, 1887, to August 15, 1888, 8,330 new service taps were put in throughout the city and that part of Jefferson supplied from the same engines, which hitherto could not supply Chicago alone with water; that all restrictions as to the use of water have now been removed and that everyone has all the water he wants at any and all hours — taking all these facts into consideration it is evident that great mischief and damage were done from 1878 to 1888 by introducing air into the service pumps in order to make a good showing at the pumping stations, or to make the pumps work quietly on account of misconstructed valves.

EXTRACTS FROM THE OFFICIAL REPORTS RELATING TO THE "'72" BEAM ENGINE FROM 1874 TO 1885.

1874. Page 35. " Sand caused considerable damage to the metallic packing in pumps etc. These were the only repairs of note since the completion of the engine, which has given entire satisfaction."

1875. Page 39. "By referring to the table on page 32, it will be seen that the south engine has been in operation over ninety (90) per cent. of the entire time since the date of last report, and has pumped over eighty (80) per cent. of the whole quantity of water consumed in the city. * * * The operations of this engine, while performing so large a proportion of the work, have proved entirely satisfactory, especially in regard to stability and smoothness of action, without the slightest accident or undue wear."

1876. Page 37. "The south engines have been in continuous operation ninety-one per cent. of the time during the past year, pumping more than seven-eighths of the total quantity of water. The pumps of the '1867' engine, at present writing, are being fitted with new valves, which will be completed in the course of two (2) or three (3) weeks."

1877. Page 45. "Engine '1872' received pretty general overhauling during January and part of February last. Both working beams were taken out of pillow blocks, in order to fit new keys in the main journal shaft. Other repairs were made upon the pumps, a portion of the foundations, and wherever necessary."

"An apparatus has been devised for the purpose of introducing an air cushion in the main water pumps. This device has proved very satisfactory in its operation, relieving the engine of any jar or concussion whatever."

"After repacking and cleaning the engine referred to, it was started on February 17, 1877, and has continued to run night and day to date of this writing, March 31, 1878."

1878. Page 40. "This south engine '1872' has been in operation 287 consecutive days and nights."

"The two double engines at the North Side works, and the two single engines at the West Side works are in reality the main reliance of the city for water."

Page 41. "Early in the year a new air compressor was connected to the engines for the purpose of creating a suitable air cushion in the pumps for the purpose mentioned in the last reports."

1879. Page 33. "The thorough refitting of the pumps of the '1872' engine referred to in the last annual report, was completed in June last, and has proved a great improvement. The engine was started soon after, and has continued in operation day and night since that time, working in the most satisfactory manner, and at the present time is in prime condition. No accident or breakage of any kind has occurred during the past year."

1881. Page 33. "The operation of North works has not been interrupted during the year from any cause. The pumping machinery is in good order."

1882. Page 57. "The south '1872' engines have pumped over two-fifths of all the water delivered from these works, and have been running 343 days, having stopped about eighteen (18) days for overhauling."

In 1883, "the south '72' engines have pumped over five-eighths of all the water in 353 days in the year."

In 1885, "the south '72' engines have been in continuous operation, except one or two stoppages of a few hours duration, from May 6, to November 25."

In 1886, "the '72' engines have been in operation 361 days."

These extracts from the official reports show that this "'72" engine has been in this condition since February, 1878, and has been credited with an immense amount of work, which it did not perform.

After I had the work on the repairs of the "'72" engine at the North Side water works well under way, I went to the West Side water works to get better acquainted with the affairs at that pumping station. This station had been looked upon for a long time as the model pumping works, and I found everything in apparently good order.

The four compound-beam engines were of modern construction; the high pressure cylinder forty-eight (48) inches diameter by six (6) feet stroke; the low pressure cylinder seventy-six (76) inches diameter by ten (10) feet stroke; the pumps, of the bucket and plunger variety, fifty-two (52) inches diameter and ten (10) feet stroke, driven direct by the piston rod of the low pressure cylinder. Two of these engines were built in 1876, the other two in 1884.

The boiler house contained twelve (12) boilers, eight (8) of which were in use when all four engines were running. Many improvements were made in the boiler furnaces and the superheating of the steam before it reached the engines. The steam cylinders were not steam jacketed; only the cylinder heads and bottoms were heated by steam from the boilers. All necessary preparations and contrivances were on hand to make accurate evaporation tests, and this station was used for years to give the comparative value of coal, according to the tests made there by the chief engineer of that station.

I found in the basement of the engine house two air compressors, one for each pair of engines, in full operation, making each forty-six (46) to fifty (50) double strokes per minute. The air was forced into a receiving tank and from there passed into the suction chambers of the pumps, in the same way as was practiced at the North Side water works.

To get at the amount of air being pumped I had the back head of the air cylinder removed. The compressor was stopped about half an hour while the pumping engines were in operation, but no change of action of the pump or valves was noticed. This confirms me in my theory that the air which was forced into the valve chambers of the service pumps was not necessary, as had been claimed, and only worked against the very object for which the pumps were to be used, viz., to supply the city with water and not with wind.

I found the two air cylinders to have each eleven (11) inches bore by sixteen (16) inches stroke, and could furnish, at forty-six double strokes per minute, 3,040 cubic inches of atmospheric air for each double stroke or eighty-one (81) cubic feet per minute, which was forced into the pump barrels on the up strokes of the pump buckets, and which caused so much loss of water.

Besides the air furnished by these compressors, more air was drawn into each pump through several air pipes which were attached to the suction chambers and were provided with check and stop valves. These air pipes should have supplied sufficient air for the air chambers, but I found here the same trouble as at the North Side. The location of the air chambers was back of the delivery outlet from the discharge valve chamber, and its connecting nozzle was below the highest space in the delivery chamber. The air, which was mixed with the water, flowed out with the current and did not work backward to the air vessel. Therefore, not much relief was brought to the air chamber, the air being forced into the city mains.

At the present time a small three-fourth inch pipe with check valves supplies air enough for two big air chambers to keep them supplied with air for air cushions.

I repeated my visit to the West Side pumping station, and explained to the Chief Engineer what I had done on the previous day without the slightest injury to the engines. With the words, "Come, let us try it again," we walked together out of his office, and started for the lower floor of the engine house where the air compressors were located.

The compressor at the south engines was stopped, and, as on the previous day, no change was observed. Then the air compressor on the north engines was stopped, with similar results. As soon as we arrived on the upper floor, however, a heavy thumping of the eastern engine of the northern pair commenced, which gradually increased until I asked to have the compressor started again slowly. The thumping of the engine then ceased. I wanted to see how fast the air pumps must run to stop the noise, and on going down stairs suddenly I observed one of the oilers quickly opening the natural air cocks on the pumps, which supply all necessary air. I checked the motion of the compressor down to about five double strokes per minute, which then hardly forced any air into the pump, but the engine kept working quietly. On arriving on the upper floor the engine commenced to work badly again, for the reason that the oiler shut off all air again from the pumps as soon as I had gone up stairs. Another oiler, who had also noticed what was going on, and fearing some serious results, asked the assistant engineer if he wanted all the air cocks closed. He was ordered to open them at once, and all thumping ceased.

My report to you of the above occurrence resulted in the summary discharge of the Chief Engineer.

The air compressors have since been disconnected. All pumps work well by using only the necessary air cocks for the air chambers, and they now pump solid water.

I found here also that the evaporation tests were made only for eight hours, the same length of time as the engineers, oilers, firemen and coal-passers were on duty. This time is too short for any accurate tests of evaporation. It should be carried out for at least twenty-four (24) hours. But for a comparative test of different kinds of coal, it may be sufficient, provided the men take more than ordinary care in leaving fires and height of water in the boilers in the same condition at the end of the trial as they find it at the beginning.

There are four boilers used to generate steam for each pair of engines, the steam being carried from the boilers through a main steam pipe to both engines, and all steam used for the compressors, steam pumps, jackets and for heating the building was taken from this main steam pipe connecting the four (4) boilers. I noticed that the men measured only the water for two of the boilers, and also took account only of the coal which was used for these two boilers, while the steam generated into these two entered in common with the steam from the other two boilers which were not being tested. Thus the whole test proved itself a farce at once. Then the men told me that this was the way it had been done for years, and that they were instructed to make it in this way.

I had received from the Chief Engineer, on the day before his discharge, the results of the last seven tests, which show an average of 67,043 pounds of water evaporated by 6,286 pounds of lump coal in eight (8) hours, or 10.66 pounds of water by one pound of coal.

On March 2 there were evaporated, according to his figures, 70,800 pounds of water of 170 degrees by 6,250 pounds of best lump coal, or 11.326 pounds of water by one pound of coal. On March 3, in the same manner 64,900 pounds of water of 170 degrees were evaporated by 6,500 pounds of nut coal, or 9.984 pounds of water by one pound of coal. In other words, the evaporation could be brought to any desirable figure by saving coal under the two boilers which were being tested and burning any quantity of coal under the other two boilers, for which the coal was not weighed ; or by running off some of the hot water in a suitably located bath tub, which has been done, I am told, as often as the evaporation did not come up to the desired figure.

I then ordered the jackets shut off, or no steam admitted to the jackets on the cylinder heads on the engines. I had the water measured and the coal weighed for the four boilers. Exhaust steam from the pumps was then used for heating the feed water, and live steam from a small steam pipe in place of the exhaust steam from the air compressors, which were now stopped, so as to get the temperature of the feed water to the same height as it had been when used before. The same men who made the tests before made them again, and the length of time was again eight (8) hours. In this way, on March 6, we evaporated with the best lump coal 117,400 pounds of water of 170 degrees with 12,250 pounds of coal ; or 9.583 pounds of water by one pound of coal. Accordingly the amount of evaporation by the same kind of coal, of March 2, was given 18.18 per cent. too high.

In the same way on March 7, we evaporated with the same kind of nut coal 118,200 pounds of water by 13,000 pounds of nut coal; or 9.092 pounds of water by one pound of nut coal; thus showing the returns of March 3 to have been given 9.8 per cent. too high. For the last seven tests, as given before, the evaporation was likewise found to have been given 11.3 per cent. too high.

I now made another discovery, which reduced still further the claimed evaporative power of the coal. The two measuring tanks were made of cast iron. Each tank had a water gauge glass the whole height, and the tanks were graduated in seventeen equal parts, each part being supposed to contain 100 pounds of water. Consequently, each of the tanks should contain 1,700 pounds of water, from the lowest mark to the highest. On March 9 we filled and emptied the tank several times with hot water from 170 degrees to 175 degrees, so as to get the tanks in their regular condition of temperature, refilled the tanks with water of 170 degrees, and weighed the water accurately on a balanced scale. The weight of water was 1,650 pounds. In other words, the weight had always been given 3⅓ per cent. too high.

Afterwards, on March 13, the tank was filled with cold water and left standing twenty-four (24) hours in order to get the temperature of the room, 70 degrees. The water in the seventeen parts of the tank was then carefully weighed, and it was found to be 1,690.5 pounds, which seems to show that the tanks contain 1,700 pounds of water of about fifty degrees, but not of 170 degrees or more. As a matter of fact, the tanks had been graduated by using cold water.

This mistake reduced still further the claimed evaporation of water by the coal on March 6, from 117,400 pounds to 113,947 pounds, or 9.301 pounds of water by one pound of lump coal. Consequently the returned evaporation of that class of coal was given 21.78 per cent. too high. In the same way the nut coal only evaporated 8.8246 pounds of water, against 9.984 as reported on March 3, which was consequently 13.13 per cent. too high. For the last seven tests as given above, instead of 10.66 pounds, it was actually but 9.301 pounds. In other words, the tests had been reported as 14.6 per cent. too high.

On March 15 we started a twenty-four hours' test, burning good lump coal and using the jacket on the cylinder heads for the first four hours. The total amount of water evaporated in twenty-four hours was 340,648 pounds. To accomplish this evaporation a total of 37,500 pounds of coal was used. During the first four hours 56,585 pounds of water and 6,250 pounds of coal were used, or 9.053 pounds of water for each pound of coal. In the next four hours, the jackets not being used, there was an evaporation of 8.85 pounds of water by one pound of coal. The water used in the jackets in four hours and which was not returned to the boilers, was 1,665 pounds. For the last twenty hours of the test there was an evaporation of 9.12 pounds of water for each pound of coal. The grate under each boiler is 36.336 square feet. The amount of coal burned for each grate in twenty-four hours was 12,500 pounds, or for each square foot of grate, 14.33 pounds per hour. In twenty-four hours the ashes and cinders amounted to 5,215 pounds in 37,500 pounds of coal, or the very high per cent. of 13.1.

According to the coal contract of August 27, 1887, Laurel Hill lump coal was to have evaporated ten pounds of water, and Laurel Hill nut coal nine pounds of water for each pound of coal. The evaporation tests consequently show a decided shortage.

The coal contracts of 1885 and 1886 were so worded as to give the contractor more or less than the contract price, according as the coal he delivered was above or below contract grade. The contract also stipulated that the quantity of water used should be noted for days of twenty-four hours and that the tests should be continued for many consecutive days. By conducting the alleged tests as I have mentioned, the contractors were found to be entitled to an average of twenty-two cents a ton more than contract price. In reality they should have received forty-one cents less than contract price per ton!

The same state of things existed at the North Side water works. In brief, I found that from December 3, 1885, to June, 1887, there were paid out $18,128.49 for *extra charges* on this high duty coal. A very remarkable thing was noted here. The same quality of coal which evaporated on August 4, 1885, only 7.84 pounds of water, evaporated on December 20, 1885, 11.94 pounds of water! The contractor had been changed between the times of making the two tests.

At the West Side water works evaporation tests of twenty-four hours duration are made now every month. They have resulted as follows:

For April, 8.232 pounds of water by one pound of nut coal.

For April, 10.058 pounds of water by one pound of lump coal.

For May, 8.25 pounds of water by one pound of nut coal.

For June, 8.88 pounds of water by one pound of lump coal.

For June, 8.36 pounds of water by one pound of nut coal.

For July, 8.805 pounds of water by one pound of nut coal.

For July, 9.075 pounds of water by one pound of lump coal.

For August, 9.54 pounds of water by one pound of lump coal.

For August, 9.115 pounds of water by one pound of nut coal.

For September, 10.13 pounds of water by one pound of lump coal.

For October, 10.00 pounds of water by one pound of nut coal.

For December, 10.13 pounds of water by one pound of lump coal.

The engines at the West Side have worked very well this summer. They have pumped more water than ever before in an equal time, and have been kept in good condition. They require close attention, however, to keep them in good working order.

The old engines have elastic rubber bands for valves (Morris' valves) in the pump. They give a great deal of trouble and are expensive, as they often break or tear. They should be replaced by cages with small rubber valves, similar to the ones at the North Side water works.

The new engines have double-beat valves for pump valves, but they are not made correctly. Each pump has a large twenty-four inch diameter suction valve in the center and twelve eight-inch suction valves placed around the large one. To keep the valves from lifting too high, and to make them seat quickly, spiral springs are used. They work all right as long as they are new, but as soon as they lose their elasticity or break, the valves cause an unnecessary thumping noise in the pumps and a trembling of the floor.

A few weeks ago one of these large center valves broke the spiral springs and stripped the nut off the bolt which holds the valve. The large valve bell was lifted clear off its guide and was also bent. This required the shutting down of the engine until a new valve was made. In the meantime a general overhauling of the engine was effected. The new valve is a large cage with sixty-six rubber valves of 4⅛ inches diameter, in place of the twenty-four inch double-beat valve. The engine was started again on December 8, and works far better than before. It can now make fourteen revolutions per minute, working at the rate of 20,000,000 gallons each twenty-four (24) hours. It was only built for 15,000,000 gallons.

The large double-beat valves in the pumps, one as suction valve and one as bucket valve, have the immense area of 436.88 square inches for floating. The lower diameters of the valve are 28½ inches and 25½ inches, and the upper diameters are 18¼ inches and sixteen inches.

The weight of the valve complete is 410 pounds in atmosphere, or 368.6 pounds under water. Thus it has 0.843 pounds of weight per square inch of floating area to bring it down to its seat. To accelerate this the four spiral springs are required.

The twelve eight-inch suction valves and the ten eight-inch valves in the bucket are also double-beat valves. The lower diameters are 9⅛ inches and 8¼ inches, and the upper diameters are $6\frac{3}{16}$ inches and $5\frac{9}{16}$ inches. Each valve bell with spring weighs $25\frac{3}{4}$ pounds in air, or $23\frac{1}{2}$ pounds under water. Each valve has a lifting area of 19,656 square inches, and a floating area of 41.1 square inches,—or only have a weight of 0.56 pounds per square inch to seat them. These valves work noisily, as soon as the spiral springs are weakened or broken, which is immediately noticed in the working of the pump. All this can easily be overcome by making new valves similar to those now being used at the North Side water works. They can easily be made ready to be placed in the pumps at any convenient time when the engines are being overhauled after their season's work.

The engine house at the West Side water works has been renovated inside; the leaky roof has been repaired; the inside face of the walls has been painted and the engines have been treated with a coat of paint and varnish. The lower floor has been relaid and fastened down, and the rooms whitewashed, so that the whole building looks clean and in order.

At the North Side water works, the same kind of repairing has been going on during the summer. All engines have been repainted and varnished, and the rooms in the building refitted, one of them as an office for the Chief Engineer. The trembling of the building has ceased, and the rooms are habitable.

Incandescent electric lights are now used at the North Side pumping station to light the building, stable, and machine shop. Cables are laid to the tower over the new shore inlet, in which electric lights are burning at night as long as navigation is open, and a fog bell is set ringing by an electric motor when fog obstructs the lights. This light is produced by a thirty (30) horse power "Ideal" engine and one Edison dynamo. It was started October 6, 1888.

On November 5 the engines at Fullerton avenue conduit were disabled by the shaft pulling out of the coupling. The pumping of lake water into the North branch of the river was then stopped. To repair the damage the tunnel had to be pumped out, which was a tedious job on account of the gates not closing tightly. A diver had to be employed to remove the obstructions. Afterwards the repairs went on all right and were finished on December 26, when the engine commenced to work again and lake water was again forced into the North branch.

The engines at the Bridgeport canal pumping station again require a thorough overhauling. They should also be improved by extending the shafts through the suction elbows, so as to be able to give them a bearing outside of the wheels. At present the heavy wheels hang on an overhang of the shaft, outside of a single bearing, which, when the bearing has worn down brings a bending strain on the cranks of the engine at every stroke. Through this influence three of the cranks and one of the bed-plates are already broken. When the load of the wheel is distributed over two bearings and the cranks are strengthened the engines will not be exposed to such frequent breaks.

It seems that the whole arrangement to draw the water through one elbow and discharge it through another bend overhead is a very poor device.

I believe that had the whole plant been constructed similarly to the Fullerton avenue conduit, or had the wheel-shafts been placed in line or central with the conduit, better results would have been obtained.

Respectfully submitted.

F. W. GERECKE,
Chief Engineer.

DETAILED REPORT.

CHICAGO, Jan. 20, 1889.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR: — I herewith submit to you the Thirty-sixth Annual Report of the North Side water works, ending December 31, 1888.

During January the "'67" double-beam engine was undergoing repairs; the pump barrels were re-bored and the pump pistons fitted to the enlarged bore; the suction and discharge valves, which were at that time in the valve chambers, were repaired, and they worked after that as well as such misconstructed valves could work. The engine was started on February 1, as the quantity of water which the engine could furnish was badly needed at that time. That engine did work in this condition up to August 25, when it was stopped to take out the old double-beat valves and to put new valves of a different construction in their places. The engine was then again started, and it supplied more water than before. This engine was afterwards transferred into a compound engine. It took from October 6 to November 23 to make the change, and it is now running more economically than at any time before.

On February 7, the large "'72" double-beam engine had to be stopped, as the rubber valves on the air-pump buckets gave out. The engine then received a general overhauling; new suction and discharge valves being placed in the valve chambers of the pumps, after the old double-beat valves had been removed. This overhauling of the engine was finished on May 29, and the engine has since been running constantly, pumping solid water. Not one cubic inch of air has been required to go into the suction chambers of the pumps or to be forced into the pumps in an artificial way. The air compressors, formerly in use for keeping the valves quiet are still in position, but they are disconnected and have not been in use since the engine was stopped in February. I suppose they will never be used again for this purpose and could be disposed of.

The discharge pipe from the south pump of this engine was cut just outside of the building and a twenty-four-inch branch pipe with the necessary stop valve was laid from this thirty-six-inch main to the twenty-four-inch main leading to Pine street, thus doing away with the unnecessary back pressure in the pipes near the tower where the two thirty-six-inch mains were contracted into one pipe of the same diameter. A twelve-inch pipe from the air chamber on the "'67" engine was also attached to the same pipe below the water line, leading to the delivery pipe of the old " '53 " engine inside the building. The discharge pipe from each pump of the " '67 " engine is twenty-eight inches in diameter, and after both are connected they have only one outlet of the same diameter. When this " '53 " engine is not running, the new twelve-inch pipe relieves the contracted pipe of considerable back pressure.

The " '53 " engine also received some attention during the time, from June 26 to August 10. The old brass flopper valves of the buckles and in the suction plates have been removed and new valve plates with small rubber valves substituted. The braces on the column have been supplied with turn buckles so that now tension can be put on the brace rods. These keep the column from rocking, make the engine run quieter than it has for years, and the loud knocking noise of the valves is stopped.

The engine, as it now is, may be used for some years more and can pump more water than ever.

The only engine which has escaped any change is the "'57" beam engine. This engine has been in use only occasionally, having been kept as a reserve. The engine under low pressure works well enough for such an old one.

The new Gaskill engines have worked well, but require very close attention. They were built to do heavier work than to pump against a head of forty pounds pressure and they feel a change of pressure very quickly. The engines work better now than at the commencement of last year.

One of the large boilers in the center boiler house has been removed and sold as scrap. In its place have been put two horizontal tubular boilers of sixty-four inch diameter and eighteen feet length, each boiler containing sixty four-inch tubes. They have been furnished with the Murphy self-stoking furnace to burn soft coal and have been in operation since September 11.

The burning of soft coal in these furnaces has been very successful. When they are in regular operation no smoke is observable coming from the stack. The disagreeable features of burning soft coal are entirely eradicated.

The amount of water pumped at the North Side water works up to May 29 can be given only with great allowances, as up to that time the engines were in the same condition as last year. After that date the supply of water was increased, as then the large "'72" engine commenced to work and added its 32,000,000 gallons of water to the daily supply.

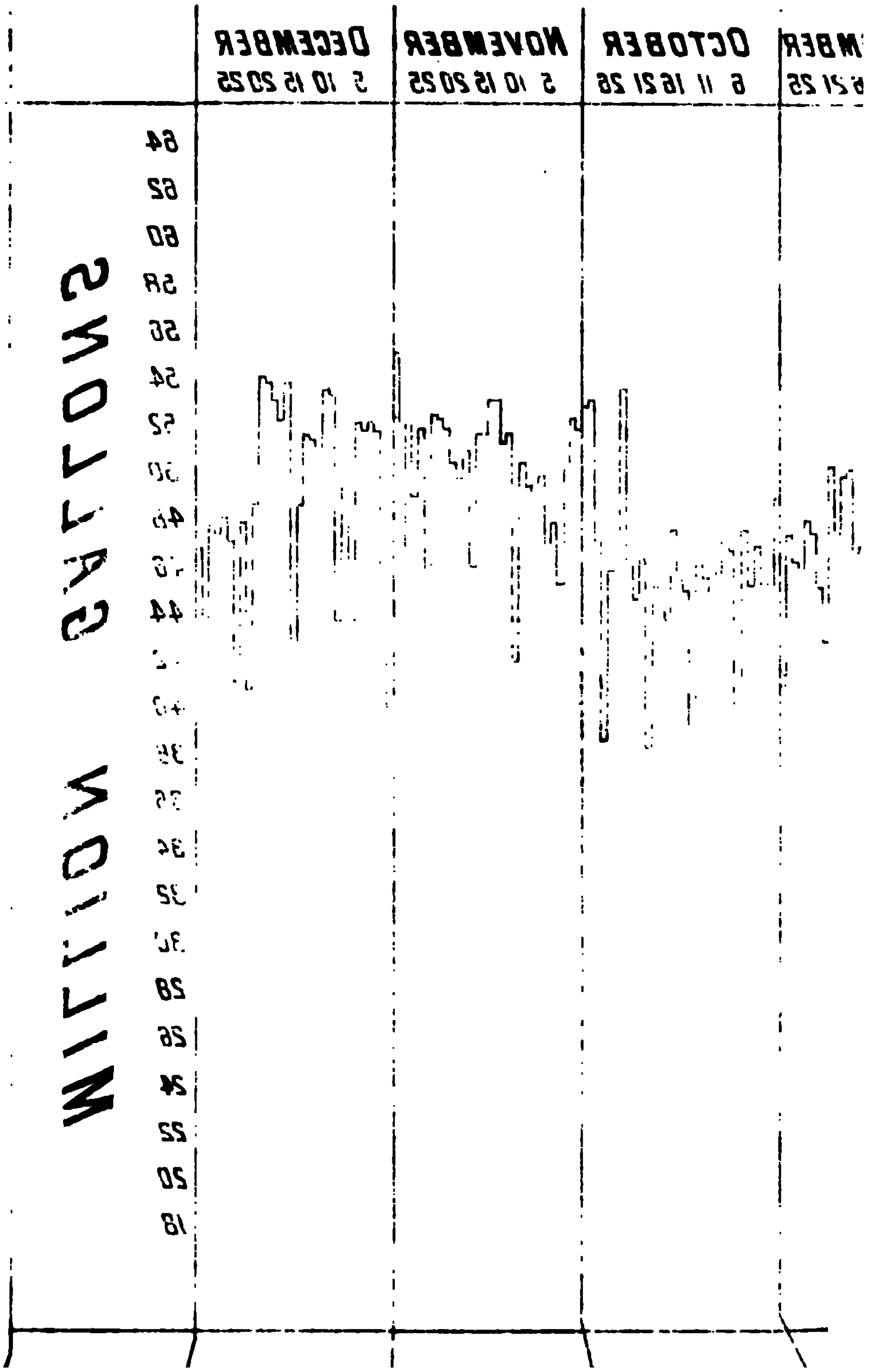
By putting the quantities of water together, on the "'72" engine only one-third of the capacity of the pumps is taken to February 7. Twenty per cent. of loss is also allowed on the "'67" engine up to the time when the new valves were placed in the pumps. After that time, nearly the full volume of the pumps is credited to the supply of water.

The North Side water works main building has been cleaned and painted during the year; all the engines have been painted and varnished, so that the building looks fresh and clean; the rooms have also been repainted and one room up-stairs fitted up as the working room for the Chief Engineer.

Since October 6, the engine building, boiler rooms, machine shops and stable have been lighted by electric incandescent lights, and the same engine and dynamo furnish also lights for the new light-house on the shore inlet tower, 1,500 feet from the shore and furnish power for the fog bell located in the same tower.

Few changes have been made in the personnel of the engineers at the North Side water works. Mr. Henry Welch, as Chief Engineer, has charge of the works; Engineers Farron, Fogg and Van der Hoven attend to the beam engines, and Engineers Kline, Ferris and Knuth to the Gaskill engines.

Attached hereto is a table showing the quantities of water pumped by each engine during each month in the year, and another table showing the expenses connected with the pumping of those quantities during the year.


MILLION GALLONS
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18
DECEMBER
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NOVEMBER
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OCTOBER
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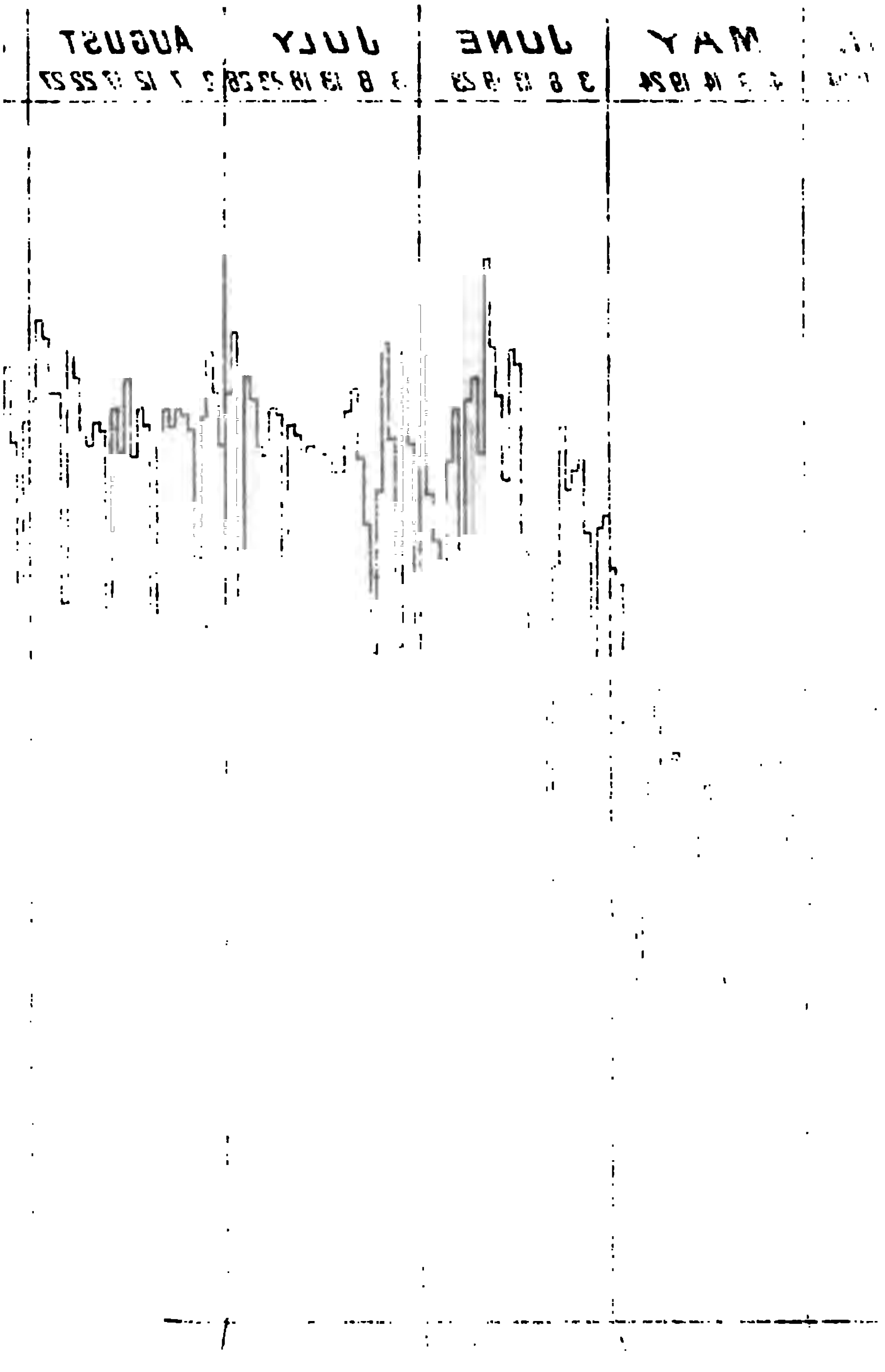
AGRAM OF PUMPAGE FOR

NORTH PUMPING WORKS



NORTH PUMPING WORKS—GALLONS PUMPED 1888.

MONTHS.	1853 Engine.	1857 Engine.	1867 Engine.	1872 Engine.	Gaskill Engines.	Total Gallons.
January.......	62,333,600	19,620,800	....	341,110,685	460,478,460	883,543,545
February......	51,946,000	157,471,600	308,512,400	73,913,110	574,975,205	1,166,818,315
March.........	52,308,000	85,708,800	402,499,200	....	631,366,770	1,171,882,770
April..........	51,672,000	154,902,400	358,751,400	....	484,268,335	1,049,594,135
May..........	24,660,000	147,350,000	320,792,000	73,974,810	460,252,490	1,027,029,300
June......	31,892,000	29,726,400	135,422,400	760,686,240	502,108,645	1,459,835,685
July..........	....	....	61,161,600	916,528,290	392,655,675	1,370,345,565
August........	24,855,000	36,986,400	24,466,400	948,837,490	478,783,920	1,508,829,210
September.....	18,494,800	4,523,200	67,112,000	844,487,270	451,048,335	1,385,665,605
October.......	66,851,000	23,000.000	24,277,000	887,170,710	423,888,510	1,425,187,220
November.....	82,170,000	106,716,800	52,649,000	845,073,380	432,007,920	1,518,617,100
December.....	50,404,000	65,534,400	112,644,850	889,347,240	418,055,835	1,535,986,825
Total Gallons..	517,686,400	831,540,800	1,868,288,250	6,576,129,225	5,709,890,100	15,503,534,775

TABLES SHOWING QUANTITY OF WATER PUMPED AT THE "NORTH PUMPING WORKS" EACH MONTH DURING THE PAST ELEVEN YEARS.

MONTHS.	1877.	1878.	1879.	1880.	1881.	1882.
January	719,462,385	898,314,968	1,138,741,694	987,419,633	1,160,313,094	1,060,553,493
February	774,594,448	815,598,987	983,647,626	906,653,592	1,071,244,080	984,359,947
March	1,088,521,780	906,047,019	1,083,257,148	978,890,272	1,084,122,691	1,126,205,744
April	1,109,008,815	586,000,942	677,241,146	974,805,639	1,005,401,896	1,010,929,508
May	1,154,372,813	639,630,064	781,082,231	1,060,443,267	962,315,027	1,148,043,237
June	1,110,876,865	724,020,984	755,459,026	1,086,446,318	1,057,288,288	1,231,069,204
July	1,115,239,814	1,114,216,563	1,046,815,119	1,122,556,346	1,272,257,588	1,303,469,202
August	1,066,176,419	1,122,492,614	1,069,289,439	1,069,773,864	1,339,159,996	1,314,724,931
September..........	1,012,628,066	1,050,831,650	989,337,876	1,080,682,710	1,236,847,152	1,300,657,799
October	998,713,776	1,064,588,733	1,047,124,358	1,038,422,722	1,344,845,991	2,230,715,910
November.........	909,774,581	1,145,355,798	786,223,037	982,829,141	1,227,120,714	1,155,586,563
December...........	899,607,884	1,078,271,910	794,884,281	1,065,582,401	998,525,362	1,238,878,846
TOTALS.........	11,598,977,646	11,145,370,232	11,158,102,981	12,354,008,905	13,756,940,879	14,150,198,864

MONTHS.	1883.	1884.	1885.	1886.	1888.
January	1,459,650,870	1,597,746,065	1,183,792,300	1,344,346,935	883,543,545
February	1,387,274,940	1,400,054,060	1,172,952,080	1,249,745,645	1,166,818,315
March	1,390,238,480	1,461,838,615	1,179,418,925	1,326,064,370	1,171,882,770
April	1,206,918,690	1,243,150,060	1,082,368,455	1,295,609,455	1,049,594,135
May	1,226,970,205	1,352,183,420	1,044,409,125	1,207,402,595	1,027,029,300
June	1,279,606,075	1,334,334,220	1,095,438,595	1,446,240,195	1,459,835,685
July	1,414,407,680	1,400,897,800	1,207,702,805	1,519,236,895	1,370,345,565
August	1,435,126,930	1,231,432,525	1,222,961,195	1,477,798,050	1,508,929,210
September	1,307,348,100	1,228,234,905	1,170,082,285	1,385,820,055	1,385,665,605
October	1,294,425,370	1,147,392,310	1,208,596,170	1,365,692,850	1,425,187,220
November	1,530,954,540	1,042,210,985	1,101,196,590	1,202,828,595	1,518,617,100
December	1,432,341,210	966,175,820	1,335,815,400	1,418,069,045	1,535,986,325
TOTALS	16,365,263,090	15,405,650,785	14,004,733,925	16,238,854,625	15,503,534,775

NOTE.—No quantities of water could be given for 1887, as most of the engines were spoiled by the use of air in the pumps, which had been done since 1877-1878. Therefore great allowance should be made even for the quantities given from 1877 to 1886. The figures for these years are not correct. They only show how much water the engines should have furnished—but they did not do it.

MAINTENANCE OF THE NORTH SIDE WATER WORKS.

I.—LABOR.

Care of buildings and grounds	$1,200 00
Repairing machinery	2,100 00
Repairing machinery (Water Works shop roll)	2,043 20
Total	$5,403 20

II.—SUPPLIES.

Lumber	$365 94
Doors	36 76
Repairing roof	216 70
Grass seed	3 04
Earth filling	125 20
Skylights	307 40
Carpets and furniture	169 83
Lamps and globes	103 34
Plumbing	110 30
Settees for lawn	26 00
Lawn mower	10 00
Rope	15 63
Paving	254 35
Plastering	3 00
Paints and oil	309 64
Hardware and iron	466 86
Total	$2,523 99

III.—REPAIRING MACHINERY AND NEW MACHINERY.

Electric light plant	$3,353 77
Castings	2,604 42
Freight and express	93 21
Boilers, mud drums, etc	4,168 52
Steam cylinders, etc	1,592 50
Bricks (common)	279 67
Cement and lime	54 30
Sand	23 25
Steam gauges	33 00
Lubricators and indicators	274 82
Bricks (fire bricks and clay)	280 81
Wire and iron	168 32
Pipes and fittings	2,013 89
Valve cages, valves, etc	6,497 18
Contract work, etc	3,708 76
Gaskets and packing	413 57
Total	$25,559 99
Grand total	$33,487 18

EXPENSES FOR PUMPING.

Labor (salaries)	$52,350 03
Coal (soft, 4,076 tons and 38 lbs.; hard, 62,962 tons and 94 lbs.)	67,039 32
Oil and grease	1,087 81
Ice	120 00
Oatmeal	10 12
Rubber boots	18 30
Gas	1,216 80
Brooms, soap, etc	79 16
Hauling ashes, etc	516 39
Sawdust	6 50
Hose	85 32
Boiler compounds	51 30
Metal polish	30 00
Waste	350 02
Repairing wagon	9 05
Car fare and postage	8 70
Tools	156 88
Books and stationery	57 35
Share of stable expenses	478 75
Total	$123,671 80

TOTAL EXPENDITURES.

Maintenance	$33,487 18
Operating pumping	123,671 80
Water works shops	1,384 48
Total expenditure	$158,543 46

Number of gallons of water pumped during the year 1888 at the North Side water works is	15,503,534,775
Cost of pumping	$123,671 80
Cost to pump one million gallons	$7.97 7-10
Average head against pumps	100 feet
Cost of delivering water per one million gallons, one foot high	$ .07 977-1000

This is, as compared with the reports from 1877 to 1886, as printed in the annual report of 1886, the highest cost for pumping one million gallons; but the coal for last year cost $6.27 per ton, the highest price paid in those years. Besides, we are sure that the amount of water has been pumped, as given above, while great allowance must be made on the quantities of water reported to have been pumped in the years from 1878 to 1886, for reasons clearly stated in this report.

The engine and dynamo, which produce the electric lights for the works, have been lately moved and placed on the main floor of the engine house, where they can be more easily cared for than on the lower floor.

Following is a report of the Chief Engineer of the North Side water works, referring to the condition of the shops, stables, tower and grounds.

Respectfully,

F. W. GERECKE,
Chief Engineer.

NORTH PUMPING WORKS.

CHICAGO, January 23, 1889.

F. W. GERECKE, Esq.,
Chief Engineer of Water Works System.

DEAR SIR:—I have the honor to submit herewith the Thirty-Sixth Annual Report of these works and the annual report of the Water Works shop and Water Works stable.

COAL AND COMPARATIVE WORK.

During the last year there has been a very noticeable saving in the coal bill as compared with former years. The expenditure for coal for the eleven months ending November 30, 1888, is $67,039.32. To this should be added the December bill, amounting to $7,028.70, making a total for the year of $74,068.02. This alone shows a saving of $10,761.32 in comparison with 1887, when the annual expenditure was $84,829.34. (Twelfth Annual Report, page 375.)

In this connection reference is made to the following comparative table of revolutions:

ENGINE.	Revolutions 1887.	Revolutions 1888.	Excess Over 1887.	Less Than 1887.
"1853"...........	132,005	1,062,505	930,500	....
"1857"...........	770,220	1,157,835	387,615	....
"1867"...........	3,001,512	2,649,219	....	352,293
"1872"...........	4,686,987	3,123,400	....	1,563,587
Gaskill No. 1.......	3,746,253	6,731,118	6,820,805	....
Gaskill No. 2.......	2,573,555	6,409,495		....

It will be seen from the table that the Gaskill engines worked more than twice as much as in 1887, as they only ran during the latter part of that year. As the reports of the Chief Engineer of the water works system show that the actual work done by the other engines was much greater than that done by them in 1887, the cost of the coal used in running these Gaskill engines for the extra time should be added to the above, bringing the actual saving for the relative amount of work done to over $20,000.

MACHINERY.

During the year, an electric light plant has been placed in these works. The system is the incandescent kind, under Edison's patents. The entire works, the repair shops and the stable are now lighted by this plant, which also furnishes the light for the lighthouse on the new inlet crib and the power to ring the fog bell on the same.

The old boiler which in many annual returns was reported fit for retirement, has been replaced by two steel tubular boilers which, by direction of the Mayor, were set with the Murphy smokeless furnace.

If, as I would respectfully recommend, six more of these furnaces were substituted for those now in use in the Gaskill boiler room, the boiler capacity would be ample for a long time to come. The cost of this improvement would be but small in comparison with the resulting saving from the use of bituminous coal, which by these furnaces is completely consumed without consequent smoke or soot, as its use for the last four months at these works has fully demonstrated. Indeed, from repeated tests made, the evaporative efficiency of the bituminous coal used under the boilers in these furnaces is shown to be fully equal to that of the best anthracite coal, easily proving that the change to this furnace would result in a saving of one-half in the large bills accruing from the necessary use of such extensive quantities of coal.

The other boilers connected with the old engines are in fair condition, considering their old age and service. The boilers in the Gaskill boiler room have been repaired and are now in good condition.

Many and important changes and repairs have been made in the old engines. An enumeration of the more important changes would be as follows:

"'53" engine, old valves and valve seats replaced by new and smaller ones; engine overhauled and frame newly braced.

"'57" engine, large check valve in discharge channel removed; engine overhauled.

"'67" engine, valves in pumps removed and new valves of different pattern substituted; engine compounded and repaired.

"'72" engine, pump valves removed and replaced by smaller ones; engine overhauled.

Gaskill engines, a few necessary repairs made. These engines work in a very satisfactory manner, and are in good condition.

A detailed statement of the repairs made, the reasons for making them and the results obtained, is, I am informed, elsewhere in this report.

WATER WORKS SHOPS.

In July of last year a change in the manner of conducting the shop was deemed desirable, and Mr. Henry Munstermann, a mechanic of known experience and ability, was engaged as foreman.

The result of the methods then introduced has been most satisfactory. Before that time the shops were unable to supply the demand of the water pipe extension for fire hydrants and valves, making it necessary to put in hydrant bottoms, when the water pipe was first laid, and afterwards, to put on the main parts of the hydrant as the shop could supply them. As this extra work cost the city, on an average for each hydrant, the sum of $10, the total expense amounted for a year to a large sum.

Under the new management, it is now unnecessary to expend any of this large sum, as the output not only supplies the demand for finished hydrants and valves, but also permits the accumulation of stock to supply any unusual demand. This result is the more pleasing as the work has been accomplished with but very little change in the working force, and at a comparatively small advance in the annual cost, considering the greatly increased manufacture, the cost of the extra materials used accounting for most of this small advance, as a reference to the following comparisons will readily show:

Cost of new hydrants and repairs, 1887 Annual Report, page 94...........	$27,761 15
Cost of new hydrants and repairs, 1888, Book-keeper's Statement..........	30,502 08
Excess in cost for 1888..........	$ 2,740 93

A table showing work done will emphasize the favorable contrast to last year and preceding years.

	Made in 1887.	Made in 1888.	On hand January 1, 1888.	On hand January 1, 1889.
Single hydrant	100	146	None.	8
Two and one-half inch double hydrant	391	607	2	60
Four-inch double hydrant	4	6	None.	None.
Four-inch stop valves	53	65	26	25
Six-inch stop valves	208	282	25	82
Eight-inch stop valves	79	134	3	32
Twelve-inch stop valves	24	23	5	7
Sixteen-inch stop valves	14	2	2	2
Twenty-four inch stop valves	2	1	2	1
Totals	870	1,266	65	217

Part of the machinery in use at the shops is of very old pattern, much limited in capacity and in rather poor condition, requiring constant repairs and necessitating slower work. I would recommend that modern machinery be substituted for this, and if this is done there is no question of the shops, with the present working force, being able to supply the demand made on it, as well by the necessities of all the bureaus of this department as by those of the water pipe extension.

The repairing for the meter department has also been done at these shops. It has been quite extensive and, I am informed, is detailed in the report of that department. A large amount of work was also done for the pumping works in the way of overhauling and repairing machinery.

WATER WORKS STABLE.

The stable, the horses, the wagons and the harnesses are in good condition.

BUILDINGS AND GROUNDS.

Much work has been done on the buildings and grounds during the year.

The asphalt pavement on the drive and sidewalk in front of the works has been wholly repaired; a new sidewalk been built around the works; Tower place paved with wooden blocks; grounds in rear of the works filled in and levelled; the old shore inlet permanently closed up; the overflow sewerage of the Chicago avenue sewer directed from the engine wells; space around sidewalks filled in and grass planted; large shade trees, presented by Mr. J. V. Farwell, set out; a thorough painting given the iron fences, the lawn benches, the flower stands and all outside work; the tower thoroughly cleaned; the walls and inside and outside woodwork repaired and painted.

Most of the woodwork in the water works has been cleaned and painted; two drinking fountains and a toilet room built; the offices of the works thoroughly cleaned and painted and a new office for the Chief Engineer of the Water Works System completely furnished.

Large ventilators have been placed in the new engine rooms, making it more healthful and pleasant for those engaged therein. A new iron platform and steps have been placed between the Gaskill engines rendering their parts more easy of access.

The roof of the new engine house is in bad condition, owing to its faulty construction. It is made of an inner sheet of corrugated iron and an outer sheet of copper, with a composite filling of cinders, ashes, cement etc. The chemical action of the filling in contact with the iron causes the latter to decay, and there is danger of its falling.

EMPLOYES.

The employes of the works, shops and stables have been exceptionally faithful, no serious lapse from duty being noticed at any time in their conduct.

Gratitude is due to the Mayor and Commissioner of Public Works for the kindly treatment and most valuable assistance given to me at all times; an unusual assistance, which has borne fruit in the remarkable improvement of the work done herein and in the much bettered appearance of the grounds, buildings and machinery.

Very respectfully,

HENRY WELCH,
Engineer North Pumping Works.

BRIDGEPORT CANAL PUMPING WORKS.

These works were in continual operation during the year. Several engines had to be stopped for repairs on account of the rapid wearing down of the bearings in which the wheel-shafts rest, causing the cranks of the engines to break.

The driftwood, which sometimes gets through the screens and into the wheels from the river, also caused several stoppages. On account of high water in the Desplaines River the works had to be stopped three days in March and nine days in May. In August the engines were stopped one day to lower the water in the canal in order that a sunken boat might be raised.

During the months of June, July, August and September the works were run to their full capacity.

Annexed hereto is a table showing the work performed and the amount of coal burned at the works; also a table showing the expenses during the year to keep this pumping plant in operation.

TABLE SHOWING THE OPERATION OF THE ENGINES AT THE CANAL PUMPING WORKS FOR 1888.

MONTH.	Number of hours run per month.				Average number of revolutions per minute.	Average height of water in inlet.	Average height of water in outlet.	Average head of water pumped against.	Pounds of coal consumed per month.	REMARKS.
	Engine No. 1.	Engine No. 2.	Engine No. 3.	Engine No. 4.						
January	432	648	528	48	72.0	0.9	4.1	3.2	875,960	....
February. .	528	264	696	......	74.5	0.8	8.9	3.1	1,014,150	. ...
March.....	624	323	556	480	72.5	1.0	4.5	3.5	1,137,435	Stopped 3 days
April.......	720	192	504	720	71.0	0.9	3.9	3.0	1,103.615	....
May.	528	......	528	528	71.5	1.4	4.3	2.9	921,960	Stopped 9 days
June.......	672	456	672	547	73.5	1.5	4.7	3.2	1,321,430	....
July........	744	744	728	672	73.0	1.4	5.0	3.6	1,510,675	....
August.....	706	706	706	706	73.0	1.3	5.0	3.7	1,595,120	Stopped 1 day
September..	720	720	552	552	73.5	1.3	4.4	3.1	1,402,855	. ...
October.....	408	552	744	672	74.5	1.1	4.5	3.4	1,360,305	....
November..	264	720	720	456	74.0	0.8	4.1	3.3	1,231,390	....
December..	376	744	744	312	72.0	0.4	4.0	3.6	1,305,410	....
Totals......	6,722	6,069	7,678	5,693	... ..	......	......	......	14,780,305	....
Averages...	.....	.....	......	......	72.91	1.0	4.3	3.3	....	....

Extensive repairs will have to be made very soon as the engines are in very bad condition. Steps have already been taken to begin these repairs.

EXPENSE ACCOUNT.

PUMPING.

Labor (salaries)	$16,858 46
Coal, 14,780,305 pounds	21,323 36
Engine supplies	66 26
Oil and grease	632 61
Rubber goods	103 20
Fire brick and clay	53 85
Lamps, globes, etc	5 54
Gaskets and packing	107 00
Pails and brooms	10 50
Machine work	8 85
Lime	1 40
Waste	40 72
Repairing brick work	35
Flue scraper	7 41
Oil cups	16 00
Matches	1 30
Express charges	2 05
Total	$39,298 86

MAINTENANCE.

Teaming	$ 17	43
Repairing machinery	1,175	67
Pipe and fitting	92	44
Castings	95	06
Advertising	2	00
Lumber	258	54
Hardware	20	93
Blacksmithing	62	19
Glass and putty	9	54
Total	$ 1,733	80
Grand total	$41,032	66

F. W. GERECKE,
Chief Engineer.

WEST SIDE WATER WORKS.

The pumping engines at these works have done very good service during the year, having been kept in first-class condition so that they were at any time ready for service. Generally one of the engines was shut down during the night, when the head of water was high enough.

The number of revolutions made by the engines during the year was 20,452,028, being 993,819 more than last year. Consequently the quantity of water pumped was larger, especially when we take into consideration that we are now pumping solid water, and that we do not use the air compressors to force air into the pumps, by which a large percentage of the capacity of the pumps was lost.

The quantity of water pumped at the West Side water works was 21,046,189,980 gallons for the year 1888, while the quantity for last year (1887) was, according to the reports, 20,045,528,000 gallons, an increase of 1,000,661,380 gallons over 1887.

The day of the year when the greatest quantity of water was pumped was June 20, combining both stations. On that day there were pumped at the West Side 61,496,520 gallons, and at the North Side 59,249,330 gallons, making a total of 120,745,850 gallons.

Some of the engines were shut down during the night. Had they been kept going the full twenty-four hours, the volume of water would have been increased on the West Side by 4,230,000 gallons, one engine having been idle six hours and thirty minutes. On the North Side, one pair of Gaskill engines was idle six hours and thirty minutes, and the double north engine nine hours and fifty-five minutes, making a difference there of 7,304,425 gallons. The total would thus have been 132,280,275 gallons instead of 120,745,850 for the twenty-four hours.

During the hours from 8 a. m. to 11 a. m. a greater quantity of water is used than in any other three hours of the day, and the engines consequently run faster. On June 20 they actually did run in those hours as follows :

The four engines at the West Side, 2.85 per cent. above average.

The two Gaskill engines at North Side, 6.5 per cent. above average.

The "'67" beam engine at North Side 0.5 per cent. above average.

The "'72" beam engine at North side 10.0 per cent. above the average, which makes, reducing the speed to gallons pumped, an addition of 618,884 gallons, which is at the rate of 137,180,968 gallons in twenty-four hours.

The two single-beam engines, "'53" and "'57," were not running at that time at the North Side water works.

One of the new engines stripped the nut from the bolt, which holds the large double-beat suction valve in place. The valve bell was thus lifted from its guide and bent so as to destroy it by the bucket striking it. A new nest of valves was substituted, containing sixty-six 4⅛-inch diameter rubber valves. Since they were put into the pumps, the engine runs quicker, the pumps work better and the valves are noiseless.

This change and overhauling of the engine was completed on December 7. It would be advisable to change all the double-beat valves in the same way, as they are not properly constructed. They should work without the spiral springs now used. As soon as the springs break, the valves thump and work very noisily. If the small rubber valves should be adopted on the old engines, which are now working with the Morris rubber bands in the pumps, a material reduction in the cost of repairs on these pumps would be effected.

The inside of the main engine house has been cleaned and painted, the leaky roof has been repaired, the engines have been painted and varnished, the basement has been thoroughly cleaned and the floor relaid and fastened so that the house looks fresh and clean. All this work has been done by the men employed at the water works with the least possible cost. The management of these works has undergone a change for the better since Mr. Commons was placed in charge.

The surroundings of the West Side water works have been somewhat improved at the front on Ashland avenue. The place has been leveled and seeded and the fresh green spot north of the entrance gives a much improved appearance to the place. It is to be hoped that the same plan may be extended to the south side of the entrance and that we can afford to paint the building on the outside.

The personnel of the engineers at these works has undergone a change since last year's report. The

former Chief Engineer, Henry Mason, was discharged on March 2, and Robert Commons, one of the engineers, was appointed Chief Engineer on April 13. One of the engineers of the North Side works, Mr. Barnard, took the place of Mr. Commons, and the other engineers—Mr. Stewart and Mr. Sanborn—occupy their former positions. Annexed hereto are the tables of quantities of water pumped during every month in the year by the different engines. Also a table comparing the quantities pumped for the last twelve years and one showing the cost of pumping for the last year.

WEST PUMPING WORKS—GALLONS PUMPED 1888.

MONTHS.	Engine 25.	Engine 26.	Engine 50.	Engine 51.	Total Gallons.	Average Head against Pumps in Feet.
January.......	441,729,000	437,429,000	446,342,540	462,328,540	1,787,829,080	95.3
February......	417,171,000	419,447,000	427,742,860	423,248,460	1,687,609,320	93.6
March.......	447,550,000	446,974,000	466,718,000	460,252,000	1,821,494,000	95.8
April.........	427,540,000	435,680,000	437,197,000	447,177,960	1,747,594,960	95.1
May...	437,160,000	443,610,000	477,813,020	478,545,480	1,837,128,500	101.9
June..........	423,467,000	419,785,000	474,053,200	479,352,140	1,796,657,340	104.7
July...........	442,338,000	434,631,000	508,204,280	508,012,420	1,893,185,700	109.6
August	481,484,000	363,291,000	523,991,920	511,913,220	1,880,680,140	103.3
September....	392,262,000	369,686,000	498,467,120	510,041,260	1,770,456,380	102.5
October.......	366,013,000	467,821,000	510,199,200	481,303,600	1,825,336,800	106.3
November....	447,902,000	436,059,000	527,297,000	Stopped.	1,411,258,000	97.6
December.....	460,484,000	389,727,000	379,471,520	357,277,240	1,586,959,760	100.8
Total Gallons..	5,185,100,000	5,064,140,000	5,677,497.660	5,119,452,320	21,046,189,980	
				Average.................		100.5

ASTOR LIBRARY

MONTHS.	1883.	1884.	1885.	1886.	1887.	1888.
January	937,631,000	955,490,000	1,764,123,000	1,740,996,200	1,868,598,900	1,787,829,080
February	840,848,000	889,546,000	1,658,860,700	1,554,614,760	1,672,601,080	1,687,609,320
March	905,736,000	954,418,000	1,748,143,220	1,631,985,000	1,813,521,100	1,821,494,000
April	881,055,000	930,908,000	1,498,356,720	1,393,069,720	1,714,681,520	1,747,594,960
May	913,965,000	952,907,000	1,632,207,920	1,614,370,400	1,767,735,680	1,837,128,500
June	892,912,000	926,524,000	1,596,137,620	1,615,050,600	1,688,071,560	1,796,657,340
July	929,324,000	1,061,390,500	1,729,898,200	1,669,581,840	1,765,820,140	1,893,185,700
August	941,678,000	1,482,553,340	1,675,467,160	1,684,536,560	1,690,814,360	1,880,680,140
September	909,998,000	1,404,673,420	1,593,727,920	1,646,232,280	1,563,724,400	1,770,456,380
October	931,694,000	1,381,246,760	1,592,069,440	1,658,388,920	1,418,456,880	1,825,336,800
November	519,437,000	1,316,406,000	1,477,747,780	1,559,988,160	1,462,948,640	1,411,258,000
December	772,400,000	1,624,570,660	1,480,781,700	1,685,573,820	1,618,554,340	1,586,959,760
TOTALS	10,376,678,000	13,880,933,680	19,447,521,980	19,454,388,260	20,045,528,600	21,046,189,980

Note.—The use of air-compressors in connection with the pumping engines has been abandoned since March 3, 1888. Since their introduction at the West Side water works up to March, 1888, a reduction of nearly ten per cent., if not more, should be made from the quantities of water reported to be pumped, as the effect of the pumps was spoiled to that amount by using air, under pressure, in the suction side of the pumps.

A correction had to be made in the books at the West Side water works. On January 1, '88, an entry was made showing coal on hand in the sheds to be 795 tons, which quantity had decreased on April 15 to 753 tons. The coal was weighed when Mr. Commons took charge and there were on hand only forty-one tons, just one day's supply. This will reduce the quantity of coal on January 1, 1888, to eighty-three tons and this is charged only on the books. Since April 15 the quantity of coal burned and the coal on hand balance with the quantity received.

GENERAL EXPENSES AT THE WEST SIDE PUMPING WORKS.

DUE TO PUMPING.

Salaries	$40,364	54
Coal, 15,047$\frac{950}{2000}$ tons	49,826	47
Cylinder oil, 1,497 gallons	877	46
Lard	32	24
Lubricating compound, 3,324 pounds	270	05
Gas, 1,268,000 cubic feet	1,483	00
Repairs to engines	208	27
Repairs to boilers	659	40
Fire brick, clay and tile	124	50
Rubber and packing	579	77
Rubber valves	1,102	28
Pipes and fittings	160	45
Castings (grate bars, etc.)	360	17
Machine work, blacksmith's and fire tools,	1,017	07
Hardware, tools etc.	311	57
Lumber	44	04
Small stores	217	50
Repairing feed pumps	308	32
Ice	42	15
Total due to Pumping	$97,989	26

DUE TO IMPROVEMENTS.

Repairing engine and shafting for machine repair shops	$ 124	21
Repairing large Fairbanks scales	117	34
Repairing buildings and surroundings	550	32
Labor for repairs on buildings	2,678	52
Total due to improvements	$ 3,470	39
Total expenses	101,459	71

COAL RECEIVED AND USED IN 1888 AT WEST SIDE PUMPING STATION.

	Tons.	Pounds.
On hand January 1, 1888	83	105
Received from W. P. Rend & Co., January 1 to September 1, Pittsburgh lump,	2,116	850
January 1 to September 1, Pittsburgh nut	8,315	1,500
Received from Weaver, Tod & Co., September 1, 1888, to January 1, 1889, Youghiogheny lump	2,770	1,150
September 1, 1888, to January 1, 1889, Youghiogheny nut	2,588	20
Brazil block	25	270
Received from D. Corkery, Indiana block	34	640
Received and on hand	15,933	535

COAL USED IN 1888.

	Tons.	Pounds.
For pumping and heating building	15,020	50
For changing boiler	27	900
On hand and in shed	885	1,585
Total	15,933	535

Number of gallons of water pumped during the year 1888 at West Side water works	21,046,189,980
Cost of pumping	$97,989.26
Cost to pump one million gallons	$4 65$\frac{59}{100}$
Average head against pumps	100.5 feet.
Cost of delivering water per one million gallons one foot high	$ .04 632-1000

WORK DONE BY THE FOUR ENGINES.

Engine Designated as	Time of Work.		Number of Revolutions Made.	Gallons of Water Pumped.
	Hours.	Minutes		
No. 25	8,200	... ...	5,185,100	5,185,100,000
No. 26	8,096	55	5,064,145	5,064,140,000
No. 50	8,327	5	5,373,111	5,677,497,660
No. 51	7,597	55	4,829,672	5,119,452,320
Totals	32,220	55	20,452,028	21,046,189,980

F. W. GERECKE,
Chief Engineer.

CITY HALL PLANT.

The machinery in the City Hall building is about the same now that it was at the end of the year 1887, with the exception of a heater being supplied to heat the feed water for the boilers. The steam used in the heater comes from the electric light engines; and this has proved very successful.

The water now goes into the boilers at nearly the boiling point, while before in summer time only cold water was pumped into the boilers. In 1887, during the five months from June 1 to October 31, there were used 1,534 tons of coal. In 1888, during the same time, there were used 1,254 tons of hard coal and forty-two tons of soft coal, making a saving of about $1,423.00 in the five months.

The exhaust pipe of the engines had to be removed from the rotunda and is now running through the air shaft above the roof of the building.

The whole amount of coal used during the year was 4,151 tons of hard coal costing $15,981.35, and 150 tons of soft coal costing $502.50.

The machinery in the City Hall consists now of six boilers, fifty-eight inches in diameter by sixteen feet in length, each having forty-four 4-inch tubes.

Two Worthington pumps for elevators, 16-in. steam cylinders and 12-in. water plungers by 10-in. stroke.

Two Wheeler and Tappan pumps for elevators, 20 x 12½-inch, by 12-inch stroke.

Two smaller Worthington pumps, 14 x 7 by 10-inch, and one smaller Worthington pump, 7½-inch and 4½ by 10-inch stroke, and eight elevators, all geared 8 : 1.

Two Crane elevators, cylinders 33-inch diameter by 11-foot stroke.

Four Crane elevators, cylinders 26-inch diameter by 11-foot stroke.

Two Ellithorpe elevators, cylinders 36-inch diameter by 11-foot stroke.

The elevators are usually kept going from 8 A. M. to 5 P. M., and one of them until 10 P. M.

The City Hall plant requires the pumping of a great amount of water.

The pressure is about fifty-six pounds and the quantity is 717,219 gallons per day, but sometimes it runs as high as 800,000 gallons per day.

Very little of this water is wasted, as it is used over and over again. The cost of pumping could be reduced by procuring a larger high pressure compound pump in place of the two Worthington pumps, which will require extensive repairs soon.

The electric plant is driven by two Armington & Sims engines, both running twenty-four hours per day. One of them is 18½-inch by 15 inch, 100 horse power, and the other is 21-inch by 15-inch, 125 horse power.

By using the exhaust steam from these engines for heating the building, at least in the Spring and Fall, another considerable saving could be made in the coal bill and the expenses to fit the heating plant would be very small.

F. W. GERECKE,
Chief Engineer.

FULLERTON AVENUE CONDUIT.

The Eighth Annual Report of the operation of these works for the year ending December 31, 1888, is herewith submitted.

The engines are in fair condition and will need no repairs except what may be caused by the regular wear. The engines were overhauled, cylinders rebored and pistons refitted between March 21 and May 2. At the same time two of the boilers received new flues. The third boiler may have to be fitted up the same way during this year. A wrought-iron pipe coil was placed in the up-take leading to the chimney, for heating the feed water for the boilers, and has given very satisfactory results.

On November 6, the coupling on the east out-board shaft was pulled off on account of the bearing having been worn, and the engines had to be shut down. To get at the wheel and shaft the tunnel had to be pumped out, but the iron gate at the west end could not be closed on account of an accumulation of debris in the gateway. A wooden gate had to be constructed in place of the screen, and a diver was employed to remove all obstructions. The gates were then closed, the tunnel pumped dry and the engine shafts and the bearings repaired.

New composition boxes with lignum vitæ linings were put into the long out-board bearings ; the coupling was replaced and the west gate repaired, so that now everything works well. The engine was started again December 26.

Since July 27, the speed of the engine has been reduced from seventy-five to sixty-seven revolutions per minute, as the quantity of water put into the North branch of the river was greater than the engines at Bridgeport could dispose of. Had not this been done the river would have flowed into the lake. At no time during the year was water from the river pumped into the lake at the Fullerton Avenue Station.

On July 26, 1887, a contract was made for a lot of fuel oil to be used with a certain burner, under the condition that 2,250 tons of oil must be equal to 4,000 tons of coal ; which would evaporate nine pounds of water with one pound of coal. In other words the price for oil was to be $5.50 per ton ; while the coal would be $3.14 per ton.

From September 26, 1886, to February, 1887, there were used 1,502.4 tons of coal in 4,172 5-60 hours to pump 3,808,675,660 gallons of water.

The cost of coal was	$4,717.53
Consumption of coal per hour	720.21 pounds.
Water pumped per hour	912,898 gallons.
Water pumped by one pound of coal	1,267.5 gallons.
Cost of coal per hour	$1.13

From September, 1887, to February, 1888, there were used 6,933 barrels and 33¼ gallons of fuel oil in 4,184 30-60 hours to pump 3,863,823,550 gallons of water.

The cost of oil was	$5,686.01
Consumption of oil per hour	494,122 pounds.
Water pumped per hour	923,365 gallons.
Water pumped by one pound of oil	1,868.69 gallons.
Cost of oil per hour	$1.35
Difference between cost of oil and coal per hour	22.78 cents more for oil.
The amount of water pumped with coal to the amount pumped with using oil	1:1.4,743
Price of coal per ton to price of oil	1:1.7,516
Price paid for oil more than for coal	$968.48
Reduced to the same time as using coal	$889.34

As the above burning of oil was done for an experiment, the bill presented for payment of oil was for 6,933 barrels, 33¼ gallons of oil, at sixty-seven cents per barrel=$4,645.64, which was paid by the city.

The same engineers as last year are still at the station, Mr. W. I. Turnbull as engineer in charge, and Howell, McCoy and Snyder as assistant engineers. All have been faithful in the discharge of their respective duties.

TABULAR STATEMENT OF THE FULLERTON AVENUE PUMPING STATION, 1888.

1888. MONTH.	Time Pumped. Hrs.	Time Pumped. Min.	Total number of Revolutions of Engines.	Average number per Minute.	Average head of Water against Pumps.	Total number of Cubic Feet of Water pumped into the river.	Average number of Cubic Feet pumped per Minute.	Pounds of Coal consumed for Pumping per Month.	Pounds of Oil consumed for Pumping per Month.	MEMORANDA.
January	714	45	3,245,943	75.90	2.80	650,136,600	15,160	....	354,259.5	
February	652	00	3,004,565	76.81	2.87	599,516,950	15,325	67,090	297,528	Changed from oil to coal, Feb. 23; last boiler Feb. 27.
March	467	50	2,147,123	76.50	2.85	429,330,650	15,295	323,900	....	Shut down engine March 21.
April	......	......	....	......	......	....	......	......	......	Boilers and machinery repair'd.
May	694	15	3,110,396	75.54	2.80	631,489,800	15,160	434,750	....	Started again May 2.
June	702	30	3,233,806	76.74	2.85	643,861,250	15,275	454,250	....	
July	713	50	3,235,746	75.07	2.75	643,520,750	15,025	460,000	....	
August	707	15	3,018,339	71.20	2.60	619,890,480	14,608	417,650	....	
September	704	45	2,875,755	67.99	2.35	587,338,650	13,890	409,500	....	
October	725	30	2,926,509	67.39	2.28	594,837,450	13,665	415,450	....	
November	120	45	486,152	67.75	2.30	99,546,300	13,740	72,500	....	Shut down Nov. 6.
December	133	00	527,167	65.61	2.20	107,235,240	13,438	68,500	....	Engine shaft repairs and west gate of tunnel. Started Dec. 26.
Totals	6,336	25	27,811,501	72.41	2.60	5,606,704,120	14,598	3,123,590	651,787.5	

EXPENSE ACCOUNT.

PUMPING.

Labor (salaries)	$8,763	38
Coal—3,123,590 pounds	5,555	60
Fuel oil	4,645	64
(This includes the oil burned from September 1 to December 31, 1887. $3,250.00 should be charged to the account for 1887.)		
Paint, oil and grease	410	92
Packing	78	43
Brooms, pails, etc	3	00
Engine supplies	12	90
Lamps, globes, etc	31	35
Soaps and soap powder	9	63
Fire brick and clay	55	05
Total	$19,565	90

MAINTENANCE.

Teaming	$ 8	82
Repairing machinery	799	39
Pipe fittings	141	62
Hardware	98	31
Indicator	195	00
Lumber	84	77
Stove and pipe	9	33
Pipe covering	31	15
Wire guards	12	48
Advertising	2	00
Diver	78	00
Bolts and washers	32	12
Manure	4	00
Total	$1,496	99
Grand total	21,062	89

F. W. GERECKE,

Chief Engineer.

CHICAGO, January 2, 1889.

F. W. GERECKE, Esq.,
Chief Engineer of the Water Works System.

DEAR SIR:—The Thirteenth Annual Report of these works ending December 31, 1888, is herewith submitted. When I took charge of the West Side water works on April 13, 1888, I had to investigate the condition of all the engines, boilers and appurtenances coming under my care.

I found the old engines built in 1876 in fair condition; but new rubber valves had to be put in the pumps to get them in working order for the season. These valves, which are of the Morris kind, last only a short time; they stretch at every stroke of the pumps and soon lose their elasticity. They not only break, but they are very expensive and should be replaced by a different kind of valves. The engines had been overhauled about eight months previously, but the metal bases on all pins were brass bound and needed fitting, as they had been badly worn.

The newer engines, built in 1884, had been repaired about eighteen months before, and required some attention, as they could not run through the summer without the risk of a stoppage.

New spiral steel springs for the double-beat valves had to be procured. The money for these expenses has been well spent, as these springs have worked much better than the springs formerly used and which were of brass wire.

The engines have been in constant operation and have been subjected to heavy work. On October 30 the large suction valve on engine "'51" was lifted from its fastenings. The spiral springs had broken and the nut was stripped from the end of the bolt which held it in its position. The valve bell was bent and made useless, but luckily no other damage was done. The engine was stopped until December 8. In the meantime the whole engine was overhauled and a new suction valve of a different construction was placed in the pumps, which works so much better than the old double-beat valve that this engine can run faster and quieter than ever before.

After this "'51" engine was in running order, the other one, "'50," was stopped for nine days to fix the brasses around the engine, and to put the steam valves on the engine in order.

The steam jackets on the ends of the cylinders leaked so badly that it was necessary to shut the steam off, and the engines are running now without the use of the jackets.

Since March 3, 1888, the air compressors, which were formerly used in connection with the water pumps, have been idle and only small air valves are used to supply the air chambers with the necessary air. The air compressors could be removed and disposed of, as I do not think they will ever be used again. Since their services were dispensed with; the engines have been working better and the pumps have given more water.

During the summer one of the large gate valves, which closes the pump suction pipe from the well, broke and settled down into the water. A new valve had to be made and it was placed in position, stopping the service of the pump only thirty-six hours.

The steam boilers required much attention. Some of them had new sheets put in their shells; another required a new mud-drum and the feed water coils on three others had to be taken out, as they were used up. They will have to be replaced as soon as we get our machine shops in running order.

We have already a lathe, a planer, a drilling machine and a pipe cutting machine in position. The engine and shafting is in running order and very soon we will be able to do our own repairs.

Some little improvements have been made to abate the smoke from our stack, but it will require more radical resetting of the boilers with modern improvements to consume the smoke.

The building itself and all the engines have been thoroughly cleaned, painted and renovated; the leaky roof has been repaired; the floor in the lower story and over the pump wells has been relaid and fastened down. For all of this only the material was purchased, while the labor has been performed by our men regularly employed around the works and in the pipe yard.

At present the roof is being painted on the inside, and after this is done, the window sash and other wood work on the outside of the building should be painted to preserve them from the influence of the weather.

I also send herewith, copies from the books, giving the detailed work performed by each engine. Their work will compare favorably with the work of former years.

One of our engineers, Mr. Sanborn, has been disabled from service for ten weeks, suffering from a broken arm and many cuts and bruises received by being run over on one of the railroad crossings on his way to these works. At present he is on duty again and he will soon have regained the full use of his injured arm.

Respectfully,

ROBERT COMMONS,

Chief Engineer of West Side Pumping Works.

REPORT

OF THE

Bureau of Water Rates

CITY OF CHICAGO.

WATER OFFICE REPORT.

CHICAGO, January 1, 1889.

HON. GEO. B. SWIFT,

Commissioner of Public Works.

DEAR SIR:—I herewith submit my annual report as Superintendent of the Water Department for the fiscal year ending December 31, 1888, showing the income from water collections. I also submit the reports of Thomas Pattison, Assessor, and Henry G. Naper, Chief of Permit and Tapping Sub-department.

The reports above named will be found to contain, in detail, full information concerning the work of those departments during the year just closed.

The growth of the city, the increase in the number of houses and its manufacturing interest is fairly evidenced by the annual increase in the consumption of water and of the revenue of this department.

The balance due on assessments for the year ending May 1, 1889, is $136,963.24 as against $132,041.97 one year since.

STATEMENT OF WATER COLLECTIONS FROM JAN., 1888, TO JAN., 1889.

MONTHS.	By Assessments.	Meters.	Assessor's Miscell'ous.	Drains.	Water Permits.	TOTALS.
January.....	$ 87,590 28	$40,580 29	$738 00	$ 65 00	$ 177 50	$79,151 07
February....	24,374 79	37,030 64	... .	90 00	294 80	61,790 23
March......	18,001 71	41,756 34	12 50	645 00	649 80	61,065 35
April........	8,611 10	40,270 85	717 53	2,632 50	2,012 70	54,244 68
May.	273,222 06	41,584 87	1,586 23	1,590 00	1,612 40	319,595 56
June.......	141,205 98	44,918 34	2,469 30	1,465 00	1,636 40	191,695 02
July.........	32,619 47	40,918 90	2,023 59	1,350 00	1,549 70	78,461 66
August......	47,588 08	49,523 87	3,495 20	1,785 00	1,678 70	104,065 85
September...	31,465 20	43,641 11	1,950 00	1,302 50	1,677 60	80,036 41
October.....	29,342 49	48,030 91	1,036 50	1,887 50	1,529 90	81,827 30
November...	232,199 14	45,026 05	400 01	1,107 50	1,276 80	280,009 50
December...	148,529 73	44,234 88	420 75	965 00	995 90	195,146 26
Totals ...	$1,024,750 03	$517,517 05	$14,849 70	$14,885 00	$15,087 20	$1,587,088 98

Total receipts, 1886.......................	$1,408,755 85
Total receipts, 1887.......................................	1,526,323 88
Total receipts, 1888...............	1,587,088 98
Showing increase of water collections of 1888 over 1887.......	60,765 10
Over 1886..	178,333 13

Expenses Collection Department, 1888....	$55,157 27	
Expenses Assessor's Department, 1888...............	16,009 77	
Expenses Inspector's Department, 1888..............	33,272 24	
Total................		$104,439 28

Expenses, 1886..............	$107,755 17
Expenses, 1887...........	104,341 08
Expenses, 1888....	104,439 28

I call your attention to the report of H. G. NAPER, of the Permit Department.

Number of ferrules inserted the season of 1888,	11,564
Number of ferrules inserted the season of 1887,	9,438
Increase in 1888 over 1887........	2,126

The above is a large increase over any previous year.

The total receipts of the Permit Department under Mr. Naper for 1888.......	$38,241 70
Total expenditures, including salaries....	28,222 32
Net gain....................	$10,019 38

I refer you to the report of THOMAS PATTISON, Assessor of Water.

The number of service pipes put in by contract on streets during the year 1888 was 5,387 as against 3,956 for 1887.

Three (3) additional draughtsmen have been added to the Assessor's force during the past year. This became necessary owing to the re-copying of old plat books and to keeping up the increased business caused by new sub-divisions and new buildings erected.

The house to house inspection under charge of W. H. Nickerson, Chief Inspector, began a year ago. It has been continued the past year with satisfactory results. A greater portion of the city proper has been thus canvassed by inspectors, a work which needs to be continued. Seventy-seven thousand, three hundred and eleven houses have been examined during the year. In addition, 12,793 special examinations have been made. Of new pipe traversed, on which buildings are located, there were 123,426 feet.

The duties of inspectors were so thoroughly given in detail in my last annual report, that I deem it unnecessary to do so again. The work has, however, been efficient and well done.

The work of the leak and waste, shut-off and stopcock forces, under J. C. FOLZ, Foreman, has been well attended to, as you will see by the following report of their work :

MONTHS.	Bills Delivered.	Shut-off Notices Delivered.	Shut-off for Unpaid Tax.	Notices of Leak and Wastes.	Shut-off for Leak and Wastes.	Complaints Investigated.	Troughs Reported.	Hose Reported.
January	9,984	2,622	......	131	14	75	......	......
February	......	2,964	36	154	6	80	......	......
March	......	2,847	87	105	8	78	......	......
April	......	......	193	91	28	145	......	......
May	......	......	34	80	68	120	550	......
June	351	......	11	161	37	125	......	1,660
July	5,309	......	2	262	24	95	......	1,600
August	10,296	4,797	26	55	25	115	......	1,140
September	......	4,831	167	20	15	82	......	......
October	......	......	335	33	26	95	......	......
November	......	......	40	25	34	83	......	......
December	8,075	......	7	23	10	60	......	......
Totals	34,015	18,061	938	1,140	395	1,153	550	4,400

The first and most important question to consider in reviewing the condition of this department is the capacity of the work to furnish at all times an unfailing and abundant supply of water.

In a growing city like ours it may be said the public water works are never finished. No sooner is an improvement or extension completed than the growth of the city requires new extensions, to keep pace with the rapid increase in the consumption of water.

The increase of population is to be provided for, new streets are to be piped, new houses supplied with water and the old houses are constantly being fitted with modern water conveniences. A grave responsibility rests with those who have undertaken to furnish the public with water, for serious consequences would arise if the supply should fail and the city be shut off from water even for a short time.

The water delivered to the city throughout the year has been of excellent quality. There has been no complaint either of its quality or quantity. About August, our pumping works were furnishing such an amount of water that under your instructions orders were issued to the Police Department to permit persons who had paid for the same to use their hose for sprinkling purposes during all hours—not restricting them to the hours between 6 and 7 a. m. and 6 and 8 p. m., as heretofore.

Extending the time for discounts, May 1 to 15 and November 1 to 15, to the last day of these months, has proved a great benefit to water tax payers, giving them ample time to avail themselves of discount and in a great measure lessening the crowd at the Water office.

The business of this office during the past years shows conclusively that a readjustment of the water rates should be effected. Equalizing and reducing many charges which are now made regardless of the quantity of the water used, would, no doubt, give much satisfaction to a large number of consumers.

I would recommend that the ordinance governing the uses of water be amended. In my opinion the time has arrived when we could make some reductions and a great many equalizations.

I desire to return my thanks to the heads of the different departments for their uniform kindness and assistance rendered me in the performance of my duties. Also to the employes for the prompt and satisfactory manner in which they have performed their several duties.

Yours respectfully,

T. N. BOND,

Superintendent.

PERMIT CLERK'S REPORT.

CHICAGO, January 1, 1889.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR:—I take pleasure in presenting herewith a statement of the number of ferrules inserted, and permits for water supply issued, together with the receipts and expenditures of this department during the fiscal year ending December 31, 1888.

MONTHS.	½ inch Driven Ferrules Inserted.	⅝ inch Driven Ferrules Inserted.	¾ inch Driven Ferrules Inserted.	1 inch Driven Ferrules Inserted.	Grand Total Driven Ferrules Inserted.
January	0	0	0	0	0
February	0	0	0	0	0
March	0	4	1	1	6
April	0	100	33	14	147
May	0	178	980	00	1,158
June	0	253	1,420	00	1,673
July	0	62	1,279	1	1,342
August	0	00	788	70	858
September	0	187	443	00	630
October	3	190	73	2	268
November	0	29	1	00	30
December	0	00	0	1	1
Hyde Park, from Jan. 1, 1888, to March 17, 1888	0	00	0	0	0
Total	3	1,003	5,018	89	6,113

MONTHS.	½ inch Screw Ferrules Inserted.	⅝ inch Screw Ferrules Inserted.	¾ inch Screw Ferrules Inserted.	1 inch. Screw Ferrules Inserted.	Grand Total Screw Ferrules Inserted.
January	0	50	7	0	57
February	0	61	18	2	81
March	0	106	55	6	167
April	0	341	429	11	781
May	0	383	373	9	765
June	0	341	167	19	527
July	0	360	159	8	527
August	0	362	138	20	520
September	0	423	107	14	544
October	0	338	325	12	675
November	0	302	89	13	404
December	0	242	97	7	346
Hyde Park, from Jan. 1 to March 17, 1888	0	44	11	2	57
Total	0	3,353	1,975	123	5,451

SUMMARY OF FERRULES INSERTED.

	½ inch.	⅝ inch.	¾ inch.	1 inch.	Grand Total.
Driven ferrules	3	1,003	5,018	89	6,113
Screw ferrules	0	3,353	1,975	123	5,451
Grand Total	3	4,356	6,993	212	11,564

Of the above number 1,418 ferrules were inserted as "re-taps" in replaced street mains, 5,387 ferrules for contractors to connect to street improvement water service pipes, and fifty-seven ferrules were inserted in Hyde Park previous to the decision of the Supreme Court.

By deducting 1,418 "re-taps" and fifty-seven ferrules inserted in Hyde Park from the total presented above leaves 10,089 ferrules as the actual increase to the number inserted in previous years.

During the year 1888 there were issued by this department the following number of permits:

For tapping water mains	9,213
For miscellaneous connections	1,900
For moving houses	1,312
Grand Total	12,425

Number of plumbers' licenses issued	286
Number of plumbers' bonds filed	286
Number of leak reports received	439
Number of inspections made by the Plumbing Inspectors	7,679

RECEIPTS.

Amount received for inserting 4,759 ferrules (of all sizes), as per cash book		$14,797 70
Amount credited to Water Fund for 5,387 ¾-inch ferrules inserted for street improvement water service pipes, and deducted from contractors' bills @ $3.50		18,854 50
For 1,418 "re-taps" inserted in replaced street mains, as follows:		
1,083 ⅝-inch ferrules @ $3.00	$3,249 00	
315 ¾-inch ferrules @ 3.50	1,102 50	
20 1-inch ferrules @ 5.40	108 00	
Total	$4,459 50	
Less fifty-two of the above, for which a bill was sent to the West Chicago Street Railroad Company	156 00	
		4,303 50
For 286 plumbers' licenses @ $1.00		286 00
Total receipts		$38,241 70

EXPENDITURES.

Cost of 3 ½-inch driven ferrules @ 45c.		$ 1	35
Cost of 1,003 ⅝-inch driven ferrules @ 44c.		441	32
Cost of 5,018 ¾-inch driven ferrules	2,047 @ 52c.	1,064	44
	2,971 @ 65c.	1,931	15
Cost of 89 1-inch driven ferrules @ $1.30.		115	70
Cost of 3,358 ⅝-inch screw ferrules	2,451 @ 65c.	1,593	15
	902 @ 39¾c.	358	55
Cost of 1,975 ¾-inch screw ferrules	1,815 @ 85c.	1,542	75
	160 @ 65c.	104	00
Cost of 123 1-inch screw ferrules @ $1.30.		159	90
Salary of Permit Clerk.		1,500	00
Salary of Assistant Permit Clerk.		1,191	67
Salary of Assistant Permit Clerk.		1,050	00
Salary of Assistant Permit Clerk.		987	50
Salary of Assistant Permit Clerk for one month.		83	33
Salaries paid Plumbing Inspectors during 1888.		7,360	75
Salaries paid Tappers during 1888.		5,181	79
Paid for expressage during 1888		1,562	75
Maintenance of three horses (estimated).		360	00
Cost of shoeing three horses (estimated).		100	00
Cost of Permit Clerks' books etc. (estimated)		300	00
Cost of four new Mueller screw tapping machines, with drills, etc.		833	01
Cost of miscellaneous material for use of tappers.		148	41
Cost of repairing and re-grinding 171 ¾-inch ferrules.		17	25
Cost of drills used up in screw tapping machines, as follows:			
38 ⅝-inch @ $4.05		153	90
7 ¾-inch @ 4.95		34	65
Cost of drills used up on smooth bore tapping machines, as follows:			
9 ⅝-inch, 17 ¾-inch, and 4 1-inch. Total, 30 @ $1.50.		45	00
Total expenditures		$28,222	32
Total receipts		$38,241	70
Total expenditures		28,222	32
Net gain		$10,019	38

INVENTORY OF PROPERTY—WATER PERMIT DEPARTMENT, DECEMBER 31, 1888.

	⅛ inch Driven Ferrules.	⅝ inch Driven Ferrules.	¾ inch Driven Ferrules.	1 inch Driven Ferrules.
On hand December 31, 1887......	56	1,005	2,047	509
Purchased during 1888..........	....	3,000	3,140	....
Total....................	56	4,005	5,187	509
Used during 1888..............	3	1,003	5,018	89
On hand December 31, 1888......	53	2,912	261	481
Less ferrules found damaged......	3	47	52	....
Perfect ferrules on hand December 31, 1888....	50	2,865	209	481

	½ inch Screw Ferrules.	⅝ inch Screw Ferrules.	¾ inch Screw Ferrules.	1 inch Screw Ferrules.
On hand December 31, 1887......	....	2,451	1,815	286
Purchased during 1888..........	....	4,007	6,025	....
Total....................	....	6,458	7,840	286
Used during 1888..............	....	3,353	1,975	123
On hand December 31, 1888......	....	3,201	5,702	167

SUMMARY OF FERRULES ON HAND.

	⅛ inch Ferrules.	⅝ inch Ferrules.	¾ inch Ferrules.	1 inch Ferrules.	Grand Total.
Driven ferrules on hand December 31, 1888 . .	50	2,865	209	481	3,605
Screw ferrules on hand December 31, 1888 . .	....	3,201	5,702	167	9,070
Grand total................	50	6,066	5,911	648	12,675

	½ inch Screw Drills.	⅝ inch Screw Drills.	¾ inch Screw Drills.	1 inch Screw Drills.	½ inch Smooth Bore Drills.	⅝ inch Smooth Bore Drills.	¾ inch Smooth Bore Drills.	1 inch Smooth Bore Drills.
On hand December 31, 1887	1	2	2	2	3	12	12	6
Purchased during 1888	....	62	57	17	.....	24	24	6
Total	1	64	59	19	3	36	36	12
Used up during 1888	.....	38	7	.....	.....	9	17	4
On hand December 31, 1888	1	26	52	19	3	27	19	8

	Extra Couplings for ⅝ inch Driven Ferrules.	Extra Couplings for ¾ inch Driven Ferrules.	Extra Couplings for ⅝ inch Screw Ferrules.	Extra Couplings for ¾ inch Screw Ferrules.
On hand December 31, 1887	....	....	....	....
Purchased during 1888	100	212	250	250
Total	100	212	250	250
Used during 1888	75	101	22	67
On hand December 31, 1888	25	111	228	183

	½ inch Plugs.	⅝ inch Plugs.	¾ inch Plugs.	1 inch Plugs.
On hand December 31, 1888—				
Long shank plugs	50	98	99	24
Short shank plugs	45	20	24	23
Total	95	118	123	47

We have on hand six Mueller screw tapping machines and six tapping machines of the old pattern for driving ferrules.

In my report for 1887 I suggested that the driving or smooth-bore ferrules then on hand be used only for re-tapping in replaced street mains, and the insertion of screw ferrules only for all other applications for service pipes. This it was found impossible to put into practice to the extent desired, owing to the letting of an unprecedented number of contracts by the Commissioner of Public Works for laying down water service pipes on streets to be improved. You will notice that the total number of ferrules inserted for water service pipes let by contract alone amounted to 5,387 — exceeding the work for any previous year during the history of Chicago. Said contracts were divided among six different contractors, and as each had but a limited time in which to complete his work during last summer and fall. the demand became so great, that, even after adding four new Mueller screw tapping machines and employing three additional tappers, we found it impossible to insert ferrules as fast as wanted without dividing the force of tappers and resorting to the more expeditious method of tapping with smooth-bore or driven ferrules.

For nearly all applicants for water supply to new buildings, and for buildings in new pipe districts, screw ferrules were inserted. Respectfully submitted.

HENRY G. NAPER,
Permit Clerk Water Office.

ASSESSOR'S SUB-DEPARTMENT.

CHICAGO, January 12, 1889.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR :—I have the honor to submit to you my annual report, for the year ending December 31, 1888. It shows :

I. The amount of assessments for water rates on books on January 1, 1888, with the increases and decreases up to April 30, 1888.

II. The amount as assessed and on books May 1, 1888 for the water tax year to May 1, 1889.

III. Increases and decreases up to December 31, 1888.

IV. The amount of miscellaneous assessments during the same period. This arrangement is necessary from the fact that the municipal fiscal year ends December 31, while the water tax year is from May 1 to April 30.

V. A detailed statement of the water service pipes put in by contract.

VI. Estimates of assessments for water service pipes on the several streets ordered for improvement by the City Council and returned to the Special Assessment Department during the year ending December 31, 1888.

Amount on division books January 1, 1888............. .. $1,116,069 52

Amount of increase from January 1, 1888, to April 30, 1888, as per Assessor's checks Nos. 2 to No. 722.		Amount of decrease from January 1, 1888, to April 30, 1888, as per Assessor's checks Nos. 1 to No. 367.	
January, 1888... .	$ 1,954 21	January, 1888.....	$ 6,030 53
February, 1888....	2,475 85	February, 1888....	2,904 26
March, 1888.	3,615 80	March, 1888......	5,544 74
April, 1888.......	3,083 70	April, 1888.......	6,042 71
Total...........	$11,129 56	Total...........	$20,522 24

Decrease................................	$20,522 24	
Increase.......	11,129 56	
Total decrease................		$9,392 68
Total amount, April 30, 1888........		$1,106,676 84

Amount of miscellaneous, January 1, 1888............. ..... $13,303 41

INCREASE.		DECREASE.	
January, 1888.....	$ 194 00	January, 1888....	$ ....
February, 1888....	....	February, 1888...	....
March, 1888.......	28 10	March, 1888	....
April, 1888........	1,862 46	April, 1888......	....
Total...........	$2,084 56	Total...	$ ....

Increase...	$ 2,084 56	
Decrease.................................	....	
Total increase..................................		$2,084 56
Total amount of miscellaneous, April 30, 1888........		$15,387 97

Amount of assessment for water from May 1, 1888, to April 1, 1889, exclusive of meters	$1,190,912 14

Increase from May 1, 1888, to December 31, 1888, as per Assessor's checks Nos. 800 to 2,598.		Decrease from May 1, 1888, to December 31, 1888, as per Assessor's checks Nos. 551 to 1,953.	
May, 1888	$39,616 15	May, 1888	$21,230 61
June, 1888	8,924 44	June, 1888	12,677 49
July, 1888	13,643 08	July, 1888	4,823 89
August, 1888	13,385 76	August, 1888	10,934 00
September, 1888	10,412 38	September, 1888	37,019 03
October, 1888	8,958 33	October, 1888	4,729 91
November, 1888	3,874 59	November, 1888	9,641 06
December, 1888	2,739 16	December, 1888	7,500 09
Total	$101,553 89	Total	$108,556 08

Decrease	$108,556 08	
Increase	101,553 89	
Total decrease		$7,002 19
Total assesssment from May 1, 1888, to December 31, 1888		$1,183,909 95

MISCELLANEOUS.

INCREASE.		DECREASE.	
May, 1888	$1,383 73	May, 1888	$18 33
June, 1888	2,673 83	June, 1888	39 18
July, 1888	1,999 37	July, 1888	16 66
August, 1888	3,205 58	August, 1888	......
September, 1888	1,786 00	September, 1888	63 50
October, 1888	997 00	October, 1888	42 50
November, 1888	389 27	November, 1888	31 67
December, 1888	351 69	December, 1888	19 75
Total	$12,786 47	Total	$231 59

Increase	$12,786 47
Decrease	231 59
Total amount from May 1, 1888, to December 31, 1888.	$12,554 88

Amounts rebated by ordinance of November 21, 1884, and July 30, 1885:

Municipal and public schools	$19,485 90	
Religious, charitable and educational institutions	12,008 70	
By special order of Council, April 7, 1888	110 00	
By special order of Council, June 29, 1888	37 50	
		$31,642 10
Back tax by ordinance July 30, 1885	$465 25	
Back tax by ordinance November 21, 1884	341 94	
		807 19
Total		$32,449 29

The above amount is included in the general statement of decreases from January 1, 1888, to December 31, 1888.

WATER SERVICE PIPES PUT IN BY CONTRACT ON THE FOLLOWING NAMED STREETS, DURING THE YEAR ENDING DECEMBER 31, 1888.

STREET.	FROM	TO .	No. of Pipes.	Amount of Contract.	Assessor's Costs.
Aberdeen	Taylor	Eleventh	7	$ 118 99	$ 10 50
Armitage avenue	Elston avenue	Western avenue	132	1,864 50	180 50
Arche avenue	Halsted	South branch of river	33	716 30	49 50
Artesian avenue	Lake	P. C. & St. L. R'y	10	167 90	15 00
Armour	Chicago avenue	Kinzie	7	124 95	10 50
Ashland boulevard	W. fork of S. branch Chi. river.	Egan avenue	220	3,435 92	325 00
Alexander	Wentworth avenue	Stewart avenue	7	120 11	10 50
Adams	Rockwell	Sacramento avenue	104	1,519 36	156 00
Blackhawk	Sedgwick	Halsted	11	213 70	11 50
Butterfield	Thirtieth	Egan avenue	50	726 02	62 50
Bradley	Holt	Elston avenue	8	146 32	12 00
Belden avenue	Halsted	Perry avenue	85	1,268 45	122 50
Brown	Wright	C. & N.-W. Ry.	12	210 30	18 00
Blue Island avenue	Twenty-second	Western avenue	216	4,033 20	37 00
Cleaver	Bradley	Blanche	1	23 10	1 50
Congress	Western avenue	Campbell avenue	7	127 40	10 50
Cicero court	Congress	Harrison	3	40 50	4 50
Colorado avenue	Madison	Jackson	91	1,331 70	136 50
Cork	Ashland boulevard	Paulina	5	67 50	7 50
California avenue	Harrison	Madison	51	768 14	76 50
California avenue	Milwaukee avenue	Fullerton avenue	25	411 01	87 50
California avenue	Madison	Fullerton avenue	38	604 92	57 00
Clybourn place	Ashland boulevard	Robey	77	1,328 00	115 50
Dania avenue	Division	North avenue	85	1,342 20	90 00
Desplaines	Lake	Van Buren	15	282 15	17 50
Deering	Thirty-first	Archer avenue	42	731 22	57 00
Elston avenue	Armitage avenue	Snow	227	3,297 19	87 10
Eleventh	Morgan	May	8	130 05	121 00
Emerald avenue	Twenty-sixth	Twenty-ninth	12	189 82	18 00

Emerson avenue	Leavitt	Oakley	18	$ 246 60	$ 27 00
Erie	St. Clair	600 feet east	21	405 02	29 25
Emerson avenue	Wood	Leavitt	83	1,258 62	124 50
Eighteenth	Michigan avenue	Wentworth avenue	2	42 50	3 00
Emerald avenue	Twenty-ninth	Egan avenue	187	2,912 08	280 50
Fay	Erie	Pratt	4	65 90	6 00
Flournoy	Western avenue	Campbell avenue	17	304 05	20 50
Flournoy	Campbell avenue	Rockwell	25	398 30	37 50
Fullerton avenue	Clark	Halsted	55	720 50	80 00
Fulton	Rockwell	Kedzie avenue	177	3,137 10	260 50
Franklin	North avenue	Menomonee	22	352 50	29 50
Fremont	Center	Belden avenue	29	451 53	43 50
Fremont	Willow	Center	21	321 86	31 50
Franklin	Sigel	North avenue	5	74 70	7 50
Fuller	Archer avenue	Cologne	21	350 10	21 50
Fullerton avenue	North branch of river	Elston	13	246 54	19 50
Fullerton avenue	Halsted	Southport avenue	49	620 83	73 50
Fifth avenue	Twenty-sixth	Thirty-first	43	725 53	64 50
Hermitage avenue	Polk	Twelfth	67	1,022 28	95 50
Hudson avenue	Sigel	North avenue	8	129 90	12 00
Harrison	Michigan avenue	South branch Chicago River	9	191 70	13 50
Howe	Willow	Garfield avenue	39	607 31	58 50
Hinman	Blue Island avenue	Robey	18	330 04	27 00
Irving avenue	Van Buren	Harrison	26	412 70	36 50
Johnson	Eighteenth	Twenty-second	7	141 06	8 00
Jackson	Sacramento avenue	Central Park boulevard	153	2,528 77	229 50
Jay	Garfield avenue	Webster avenue	5	72 70	7 50
Jackson	Halsted	Hoyne avenue	33	513 19	47 00
Kendall	Polk	Taylor	22	346 12	33 00
Kedzie avenue	Central Park boulevard	Van Buren	86	1,423 60	127 50
Loomis	Eighteenth	Twenty first	15	286 50	22 50
Leavitt	Lake	Chicago avenue	15	198 80	22 50
Lessing	Chicago avenue	Chicago & North-Western Ry.	4	95 50	6 00
Lake	Western avenue	Railroad track	13	296 85	19 50
Lake Park avenue	Twenty-ninth	Thirty-first	26	305 50	24 00

WATER SERVICE PIPES PUT IN BY CONTRACT ON THE FOLLOWING NAMED STREETS, DURING THE YEAR ENDING DECEMBER 31, 1888—CONTINUED.

STREET.	FROM	TO	No. of Pipes.	Amount of Contract.	Assessor's Costs.
Locust	Wells	Western terminus	2	$ 43 45	$ 1 50
Laurel	Thirty-first	Egan avenue	243	3,707 40	359 50
Lincoln avenue	Wells	Center	12	174 60	18 00
Lyman	Main	Thirty-first	26	416 78	39 00
Lock	Archer avenue	Lyman	8	142 70	12 00
Lexington	Campbell avenue	Rockwell	12	191 40	15 50
Lincoln	Taylor	Twelfth	13	224 22	19 50
Lee place	Robey	Hoyne avenue	14	200 76	14 75
Monroe	Robey	Oakley avenue	3	59 25	4 50
Marshfield avenue	Polk	Twelfth	74	1,488 71	93 75
Market	Schiller	North avenue	17	222 70	25 50
Marion place	Division	Ellen	6	84 68	9 00
Menomonee	Clark	Sedgwick	5	75 75	7 50
North avenue	Western avenue	California avenue	61	1,116 44	86 50
Ohio	Ashland boulevard	Lincoln	23	349 14	34 50
Ogden	Twelfth	California avenue	98	2,851 72	127 00
Orchard	North avenue	Fullerton avenue	64	966 60	91 00
Osgood	Center	Belden avenue	45	681 00	67 50
Oakley avenue	Twelfth	Fourteenth	22	406 10	33 00
Pratt	Halsted	Morgan	14	213 10	21 00
Polk	State	Fifth avenue	6	132 90	9 00
Paulina	Polk	Twelfth	85	1,894 58	127 50
Park	Wood	Lincoln	9	160 71	13 50
Pine	Superior	Chicago avenue	0	....	....
Paulina	Wabansia avenue	Armitage avenue	56	812 13	66 45
Polk	Western avenue	Campbell avenue	12	205 68	18 00
Quarry	Chicago & Alton Railroad	Twenty-seventh	0	....	....
Rumsey	Chicago avenue	Division	8	38 94	4 50
Robey	Twelfth	Blue Island avenue	11	213 07	14 00

Racine avenue	Center	Fullerton avenue	108	$1,513 44	$149 50
Sibley	Gilpin place	Macalister place	4	54 40	6 00
Seymour	Division	North avenue	66	1,070 70	99 00
Stanton avenue	Madison	Lake	4	69 60	1 00
Snell	Chicago avenue	Huron	6	90 90	9 00
Samuel	Chicago avenue	Division	25	363 50	37 50
Superior	Noble	Robey	15	254 31	22 50
State	Chicago River	Chicago avenue	2	35 50	3 00
Seminary	Center	Fullerton avenue	60	918 60	90 00
Twelfth	Ashland avenue	Ogden avenue	171	3,260 78	251 50
Twenty-second	Wentworth avenue	Archer avenue	5	66 25	2 50
Twenty fourth place	Sanger	Hanover	24	391 46	8 50
wenty-second	Brown	South branch Chicago River	6	112 14	9 00
Twelfth	Ogden avenue	California avenue	153	3,117 30	229 50
Twentieth	Blue Island avenue	Ashland boulevard	2	31 40	3 00
Ullman	Thirty-first	Douglas avenue	61	1,075 90	91 50
Vedder	Larrabee	Halsted	14	315 77	21 00
Vedder	Division	Larrabee	8	139 68	9 50
Vernon Park place	Center avenue	Loomis	26	440 59	39 00
Wabansia avenue	Ashland boulevard	Robey	76	1,102 38	114 00
Wood	Twelfth	Fifteenth	9	132 99	13 50
Wieland	Schiller	North avenue	10	152 30	15 00
Walnut	California avenue	Homan avenue	151	2,322 45	226 50
Western avenue	North avenue	Fullerton avenue	154	2,412 49	221 00
Winchester avenue	Polk	Twelfth	92	1,490 40	133 00
Western avenue	Ogden avenue	Twenty-second	175	3,757 12	262 50
Western avenue	Twenty-second	Twenty sixth	94	1,840 90	134 50
		Total	5,387	$89,934 96	$7,285 30

NOTE.—The amount of contract includes the Assessor's costs and cost of taps.

The following streets ordered to be improved have been examined and estimates for the necessary water service pipes have been made and returned to the Special Assessment Department during the year ending December 31, 1888:

STREET.	FROM	TO	No. of Pipes.	Amount.
Augusta	Wood	Robey	20	$ 449 80
Adams	Rockwell	Sacramento avenue	114	2,739 20
Ashland boulevard	Madison	Twelfth	128	Not asses'd
Avon place	Hoyne avenue	Western terminus	7	Not asses'd
Astor	Schiller	Burton place	39	1,122 30
Ada	Kinzie	Austin avenue	6	136 20
Avon place	Robey	Hoyne avenue	31	612 90
Adams	State	Michigan avenue	0	Not asses'd
Armour	Kinzie	Ohio	6	125 70
Allport	Nineteenth	Twenty-second	40	971 10
Albany avenue	Van Buren	Fulton	33	860 75
Ada	Indiana	Erie	15	368 15
Brown	Wright	C. & N.-W. Ry	27	665 75
Blue Island avenue	Viaduct	Twenty-second	3	Not asses'd
Bates	Holden	Dodge	13	318 00
Burling	Willow	Center	20	550 80
Butler	Twenty-fourth	Thirty-first	80	2,010 40
Butterfield	Twenty-sixth	Thirtieth	29	777 90
Blanche	Fleetwood	Ashland avenue	16	423 20
Butterfield	Sixteenth	Twenty-second	1	Not asses'd
Blucher	Wood	Lull place	14	362 60
Cicero court	Van Buren	Congress	15	297 75
Crystal	Leavitt	Eastern terminus	46	464 00
Central avenue	Randolph	South Water	0	Not asses'd
Clark	Polk	Viaduct	4	Not asses'd
California avenue	Madison	Fulton	42	1,015 20
Campbell avenue	Polk	Twelfth	45	1,019 75
Clybourn place	Ashland avenue	Robey	91	2,299 15
Chestnut place	Chestnut	Delaware place	7	115 50
Carroll avenue	Elizabeth	Ada	13	343 50
Carroll avenue	Ann	Elizabeth	7	Not asses'd
Curtis	Huron	May	27	617 10
Carroll avenue	Curtis	Ann	10	244 20
Church court	Aberdeen	Center avenue	18	378 00
Clark	Twelfth	Sixteenth	0	Not asses'd
Chapin	Noble	C. &. N.-W. Ry	4	Not asses'd
Currier	Augusta	Chapin	13	335 10
Congress	Campbell avenue	Rockwell	9	220 50
Center	Sedgwick	Halsted	6	173 40
Clark	Sixteenth	Archer avenue	14	501 00
California avenue	Harrison	Twelfth	118	3,074 35
Canal	Lake	Fulton	5	Not asses'd

STREET.	FROM	TO	No. of Pipes.	Amount.
Canal	Harrison	Twelfth	7	Not asses'd
Cypress	Kendall	Twelfth	25	$ 585 35
Deering	Thirty-first	Archer avenue	58	1,456 20
Division	Western avenue	Sacramento avenue	203	7,273 70
Desplaines	Indiana	Ohio	1	Not asses'd
Damon	Sholto	May	16	315 60
Dean	Brigham	Paulina	10	273 00
Desplaines	Monroe	Adams	3	Not asses'd
Dudley	North avenue	Armitage avenue	97	2,361 05
Dudley	Augusta	Division	24	575 40
Diller	Fulton	Austin avenue	31	780 35
Eighteenth	Michigan avenue	Wentworth avenue	8	257 40
Edward	Center	Webster avenue	2	Not asses'd
Emerald avenue	Twenty-ninth	Egan avenue	194	4,965 20
Emerald avenue	Archer avenue	Twenty-sixth	5	135 30
Elgin	Purple	Stewart avenue	18	352 80
Elizabeth	Indiana	Erie	4	112 80
Elk Grove avenue	Wood	North	11	276 65
Eugenie	Sedgwick	Larrabee	15	357 90
Elm	Sedgwick	Larrabee	1	Not asses'd
Eighteenth	Wood	Western avenue	148	3,690 20
Elk Grove avenue	North avenue	Armitage avenue	65	1,508 05
Franklin	Sigel	North avenue	31	834 25
Fuller	Archer avenue	Cologne	26	688 80
Fullerton avenue	N. br. Chicago river	Elston avenue	28	818 70
Fullerton avenue	Halsted	Southport avenue	58	1,235 40
Flournoy	Oakley avenue	Western avenue	18	321 00
Francisco	Lake	Cologne	7	195 30
Fry	Rose	Ashland avenue	11	201 90
Francisco	Kinzie	Lake	32	940 80
Fifteenth	Morgan	Center avenue	0	Not asses'd
Fifth avenue	Thirty-first	Thirty-third	11	282 30
Franklin	Quincy	Van Buren	1	Not asses'd
Green	Fulton	Kinzie	11	308 10
Grand boulevard	Douglas avenue	800 feet South	24	608 40
Grant	Clark	La Salle	1	Not asses'd
Gold	Harrison	Gurley	3	Not asses'd
Gilpin place	Lytle	Sibley	0	Not asses'd
Garfield avenue	Halsted	Racine avenue	10	256 80
Howe	Willow	Garfield avenue	103	2,655 60
Hinman	Blue Island avenue	Robey	25	668 40
Halsted	South branch Chicago river	Egan avenue	244	2,672 40
Halsted	Viaduct	South branch Chicago river	4	Not asses'd
North Halsted	Division	Clybourn avenue	0	Not asses'd
Holden	Twelfth	Bates	13	318 00
Holt	Division	North avenue	30	774 60
Hoyne avenue	Milwaukee avenue	Armitage avenue	56	1,419 60
Holt	Chicago avenue	Augusta	10	196 80
Harvard	Western avenue	Campbell avenue	11	279 30
Huron	Kingsbury	Western terminus	0	Not asses'd
Halsted	Indiana	Chicago avenue	0	Not asses'd
Hobbie	Sedgwick	Larrabee	11	250 80
Halsted	Division	Clybourn avenue	0	Not asses'd

STREET.	FROM	TO	No. of Pipes.	Amount.
Harrison	Rockwell	California avenue	57	$1,453 20
Huron	Wells	Kingsbury	0	Not asses'd
Jay	Garfield avenue	Webster avenue	5	110 80
Ingraham	Noble	Elston avenue	17	432 90
Julian	Ashland avenue	Wood	6	163 80
Irving avenue	Adams	Jackson	0	Not asses'd
Iowa	Wood	Lincoln	2	Not asses'd
Johnson	Wright	Canalport avenue	38	946 80
Illinois	Market	Kingsbury	5	Not asses'd
Kedzie avenue	Central park boulevard	Van Buren	105	2,797 00
Lyman	Main	Thirty-first	35	879 55
Lock	Archer avenue	Lyman	11	299 75
Lexington	Campbell avenue	Rockwell	16	379 20
Lincoln	Taylor	Twelfth	20	425 60
Lee place	Robey	Hoyne avenue	37	772 40
Leavitt	Milwaukee avenue	Armitage avenue	32	824 40
Luce	Blackhawk	Northern terminus	6	136 20
Lisle	Union	Halsted	13	358 50
Larrabee	North avenue	Webster avenue	3	Not asses'd
Milwaukee avenue	California avenue	Fullerton avenue	58	1,504 20
Monroe	Rockwell	California avenue	80	1,975 20
Meridian	Desplaines	Halsted	22	595 00
McHenry	Blanche	North avenue	7	Not asses'd
Menomonee	Sedgwick	Larrabee	6	147 00
Morgan	Wright	Fifteenth	6	181 80
Michigan	Clark	Wells	9	274 50
May	Eighteenth	Twentieth	4	Not asses'd
North avenue	Western avenue	California avenue	83	2,457 15
North avenue	California avenue	Kedzie avenue	65	1,612 00
Newton	Iowa	Augusta	1	Not asses'd
Nineteenth	State	Clark	4	Not asses'd
Oakley avenue	Twelfth	Fourteenth	29	776 40
Oakley avenue	Kinzie	Indiana	0	Not asses'd
Ogden place	Ogden avenue	Paulina	11	321 90
Ohio	Lincoln	Robey	21	543 90
Olive	Taylor	Twelfth	26	652 20
Orchard	Clybourn avenue	North avenue	6	135 00
Ogden place	Paulina	Wood	30	837 00
Ontario	Franklin	Kingsbury	5	Not asses'd
Potomac avenue	Robey	Western avenue	36	891 60
Paulina	Twenty-first	Blue Island avenue	4	Not asses'd
Paulina	Fifteenth	Twenty-first	7	197 70
Polk	Western avenue	Campbell avenue	12	325 80
Perry	Clybourn avenue	Fulton	10	217 80
Pearson	Wells	Market	2	Not asses'd
Quarry	C. & A. Ry	Twenty-seventh	36	862 00
Robey	Twelfth	Blue Island avenue	39	1,025 50
Racine avenue	Center	Fullerton avenue	119	2,847 25
Robey	Armitage avenue	Fullerton avenue	114	2,927 40
Sedgwick	Eugenie	Lincoln	15	429 30
Superior	Robey	Leavitt	21	601 65
Sloan	Robey	Elston avenue	7	191 10
Sullivan	Sedgwick	Cleveland avenue	1	Not asses'd

STREET.	FROM	TO	No. of Pipes.	Amount.
Silver	Harrison	Gurley	3	Not asses'd
St. Clair	Michigan	Indiana	2	Not asses'd
Sacramento avenue	Lake	Van Buren	35	885 00
Superior	Wells	Franklin	0	Not asses'd
Sacramento avenue	Lake	Kinzie	19	496 50
Sheffield	Clybourn avenue	Fullerton avenue	122	3,261 00
South Water	Michigan avenue	Central avenue	1	Not asses'd
Sedgwick	North avenue	Eugenie	0	Not asses'd
Twenty-second	Brown	So. br. Chi. River	74	1,845 00
Twelfth	Ogden avenue	California avenue	160	5,174 40
Twenty-seventh	Halsted	Quarry	34	897 10
Twentieth	Blue Island avenue	Ashland avenue	11	282 30
Twenty-fifth place	Wentworth avenue	Halsted	43	1,155 90
Twelfth	California avenue	Kedzie avenue	112	3,595 20
Twenty-fifth	State	Hanover	51	1,316 70
Twenty-fifth	Hanover	Sanger	64	1,662 00
Twenty-ninth	Hanover	Halsted	17	410 10
Twenty-seventh	State	Portland avenue	36	901 20
Twenty-fourth pl.	Wentworth avenue	Hanover	15	434 70
Thirtieth	State	Wentworth avenue	0	Not asses'd
Twentieth	Ashland avenue	Western avenue	73	1,779 60
Taylor	Pacific avenue	The river	0	Not asses'd
Troy	Filmore	Twelfth	31	764 40
Union place	Congress	Harrison	3	Not asses'd
Union	Sixteenth	Twenty-second	9	222 30
Vine	North avenue	Willow	0	Not asses'd
Wells	North avenue	Clark	3	Not asses'd
Winchester avenue	Ogden avenue	Polk	29	790 50
Webster avenue	Clybourn avenue	Dominick	17	498 30
Western avenue	Lake	Fulton	14	353 40
Wisconsin	Sedgwick	Larrabee	4	123 60
Walnut	California avenue	Homan	24	612 80
Washington place	Clark	Dearborn	2	Not asses'd
Walnut place	Clark	Dearborn	2	Not asses'd
Wendell	Wells	Sedgwick	2	Not asses'd
Total			5,177	$128,319 90

NOTE.—In the cases of streets requiring only a few pipes and marked "Not assessed," the owners will be notified to put in whatever water service pipes they may require, before the streets are paved.

Permit me to call your attention to the necessity of changing our present mode of arranging the division books from ward boundaries to additions and subdivisions by sections, as in the State and County tax books, thus enabling us to have full additions or subdivisions in the same book, instead of a few blocks in one book and a few in another, as we have now.

For example, according to our present arrangements: original town is so cut up that we have blocks 1 to 4 in the Twenty-fourth Ward; blocks 5, 6, 7, 14 and 15 in the Twenty-third Ward; blocks 16 to 21, 31 to 43, 52 to 57, and wharfing lots 1 to 31 in the First Ward; blocks 8 to 13, 22 to 25, 59 to 64 and J and K in the Seventeenth Ward, and the balance, blocks 26 to 29, 44 to 51 and N and O in the Eighteenth Ward.

Thus we have original town scattered through five different ledgers, when it could all be in one book if the four water districts of the city were divided by section lines instead of ward lines, as at present. Take Newberry's addition, being a part of the W. ½ of the N. E. ¼ of Sec. 9, 39, 14, and we have blocks 1 to 9 in the Twenty-fourth Ward and 10 to 18 in the Twenty-third Ward. It should be all in one book. In C. T. subdivision of Sec. 33, 39, 14, we have blocks 1 and 2 in the Third Ward; 3 to 8 in the Fifth Ward; blocks 13 to 20 and 29 to 32 in the Fourth Ward; blocks 9 to 12 and 21 to 28 in the Sixth Ward, being now in four books instead of one. In Assessor's division of E. ½ of S. E. ¼ of Sec. 18, 39, 14, we have blocks 1 and 2 in the Eleventh Ward; blocks 3, 4 and 5 in the Twelfth Ward, and blocks 6 to 17 in the Ninth Ward; or Ashland's first addition, being the S. E. ¼ of the N. E.

¼ of Sec. 18, 39, 14, and we find blocks 5 to 8, 13 and 14 in the Eleventh Ward, and blocks 1 to 4 and 9 to 12 in the Twelfth Ward; and so on all over the city, thus giving us double the work to keep our examination books and records on file, so that they can be readily found for reference when needed for explanations which we are constantly required to give to the water takers when paying their bills. The division clerks would also find it much more convenient to have all the blocks of any subdivision in one book instead of two, three or four, as at present.

The four districts might be arranged as follows:

First district, all east of Halsted street and south of Madison street.

Second district, all north of Madison street and east of Halsted street and north branch of Chicago river.

Third district, all west of Halsted street and south of Madison street.

Fourth district, all west of Halsted street and north branch of Chicago river and north of Madison street.

During the past year eight volumes of our plat books and five volumes of city atlases have been rebound, and are now in much better condition than they were a year ago. So far as the time will permit after the regular routine work is done, the new plat books are being filled up as rapidly as possible, and many of the old ones are having the titles neatly written permanently in ink where they have been in pencil and nearly illegible.

For the details of the work in getting up the estimates for special assessments, the contracts for water service pipes and for the work done on annual examinations etc., I will respectfully refer you to my last annual report.

Respectfully submitted,

THOMAS PATTISON,
Water Rate Assessor.

REPORT

ON

Bureau of Sewers

CITY OF CHICAGO.

BUREAU OF SEWERS.

CHICAGO, January 21, 1889.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR:—I herewith transmit for your consideration the annual report of the Bureau of Sewers for the year ending December 31, 1888, showing, in tabulated form, the work accomplished and the cost of same.

Following is the amount of money expended in the several branches of this Bureau during the past year:

For building new sewers and catch-basins	$228,567 57
For repairing sewers and catch-basins	8,722 38
For cleaning sewers and catch-basins	52,422 41
For street intersections	45,060 59
For house drains	28,047 29
For salaries	17,002 00
For office expenses	1,069 00
Total	$380,891 24

For detailed statement of work accomplished, please see following tables:

NEW SEWERS AND CATCH-BASINS BUILT, AND COST OF SAME.

Length in Feet.	Diameter in Feet.	Average Depth of Trench in Feet.	Average Cost per Foot.	TOTALS.	
41,107	1.00	7.8	$ 90	$36,096 30	
18,018	1.25	8.8	1 02	18,378 36	
2,386	1.50	8.1	1 33	3,173 38	
18,993	2 00	9.9	1 65½	31,433 41	
7,388	2.50	10.9	2 22	16,401 36	
6,416	3.00	10.4	3 25	20,852 00	
3,353	3.50	11.8	3 78+	12,697 06	
5,345	4.00	12.7	4 14	22,128 30	
100	4.50	13.0	7 27	727 00	
1,350	7.00	13.9	10 27	13,864 50	
447	7.50	13.5	11 06	4,943 82	$181,595 49
3,026 cubic yards rock excavation				14,504 00	
Building 816 catch-basins				32,468 08	46,972 08
Total cost of construction					$228,567 57

TOTAL NUMBER OF CATCH-BASINS AND MAN-HOLES IN PLACE DECEMBER 31, 1888.

CONSTRUCTED DURING THE YEAR 1888. DIVISIONS.	South.	West.	North.	TOTAL.	Total Built Previous to 1888.	Total in Place December 31, 1888.
Catch-basins	205	507	104	816	15,234	16,050
Man-holes	113	491	70	674	16,903	17,577

TOTAL COST FOR THE CONSTRUCTION OF SEWERS AND CATCH-BASINS AND CLEANING SAME SINCE THE ESTABLISHMENT OF THE SEWERAGE SYSTEM IN 1855, TO JANUARY 1, 1889.

Year.	Lineal feet of Sewers built.	No. of Catch-Basins built.	No. of Man-Holes built.	No. of House Drains put in.	Cost of cleaning Sewers and Catch-Basins.	Street Intersections and repairs of Sewers.	Cost of Constructing.
Previ's to 1861	283,586	1,174	2,102	2,194	$ 5,619 48	No. amts found on reports.	$ 665,188 46
1861	2,826	18	33	243	1,715 60	$ 2,951 76	3,617 31
1862	15.676	68	66	365	4,897 24	3,024 07	57,036 42
1863	39,605	192	204	536	5,065 40	2,058 11	169,527 38
1864	25,021	189	183	512	9,417 81	4,597 63	87,221 48
1865	29,948	223	168	1,288	13,818 07	7,493 56	137,643 02
1866	48,127	327	271	3,732	28,445 16	7,773 65	225,564 53
1867	89,681	418	555	3,703	26,540 81	9,581 42	416,730 51
1868	47,841	480	293	3,261	26,954 06	11,287 08	197,152 92
1869	139,705	771	928	3,979	26,015 68	7,527 16	654,141 26
1870	78,166	626	468	5,187	21,464 30	10,954 74	258,664 70
1871	50,716	277	357	3,093	17,415 46	42,557 72	153,295 36
1872	47,842	245	341	1,435	21,484 16	16,975 40	173,255 76
1873	146,702	897	1,015	4,691	31,229 27	29,781 97	450,222 90
1874	222,322	1,054	1,474	6,292	36,884 57	21,996 72	587,507 38
1875	120,971	958	789	3,365	32,098 23	28,107 40	342,932 89
1876	15,248	155	75	1,172	29,345 41	19,803 29	79,545 28
1877	64,666	363	431	1,822	35,763 33	16,959 44	291,829 63
1878	88,031	492	603	1,544	25,704 37	19,259 49	37,264 97
1879	145,381	820	1,043	2,953	29,283 67	10,649 69	130,840 50
1880	79,128	271	554	4,196	25,561 48	25,068 11	92,544 08
1881	132,076	548	917	4,810	34,512 15	30,967 89	452,310 06
1882	98,515	792	725	5,677	33,969 35	26,618 05	224,450 16
1883	75,364	835	497	5,963	34,749 74	25,140 81	232,084 33
1884	101,547	751	654	5,957	43,678 03	37,893 29	258,020 91
1885	118,647	796	854	6,325	46,532 18	45,333 02	203,188 03
1886	103,193	734	723	7,441	51,110 46	50,707 64	177,647 24
1887	90,584	756	605	8,100	50,264 65	43,789 60	186,496 98
1888	104,903	816	674	8,152	52,422 41	53,782 97	*228,567 57
	2,605,518	16,046	17,602	107,988	$801,962 53	$612,641 69	$7,174,492 02

*See other tables for rock excavation, number of catch-basins, sizes of sewers, depths of trenches, etc.

LENGTH AND DIAMETER OF SEWERS IN PLACE DECEMBER 31, 1888, IN THE THREE DIVISIONS.

Diameter in Feet.	SOUTH DIVISION.		WEST DIVISION.		NORTH DIVISION.		TOTAL THREE DIVISIONS.		Total in place Dec. 31, 1888.
	Built previous to 1888.	Built in 1888.	Built previous to 1888.	Built in 1888.	Built previous to 1888.	Built in 1888.	Built previous to 1888.	Built in 1888.	
9 feet	....	....	15,493	....	....	....	15,493	....	15,493
8 feet	....	....	7,765	....	....	....	7,765	....	7,765
7½ feet	....	....	3,525	447	....	....	3,525	447	3,972
7 feet	....	....	1,462	1,350	....	....	1,462	1,350	2,812
6½ feet	2,132	....	1,380	....	....	....	3,512	....	3,512
6 feet	6,671	....	13,436	....	4,054	....	24,161	....	24,161
5½ feet	....	....	9,511	....	....	....	9,511	....	9,511
5 feet	12,990	....	46,857	....	13,885	....	73,732	....	73,732
4½ feet	7,393	....	63,875	100	8,333	....	79,601	100	79,701
4 feet	12,202	....	78,631	5,345	11,918	....	102,751	5,345	108,096
3½ feet	4,201	....	35,670	3,353	3,759	....	43,630	3,353	46,983
3¼ feet	....	....	665	....	....	....	665	....	665
3 feet	37,929	775	41,924	5,641	12,355	....	92,208	6,416	98,624
2½ feet	91,010	1,774	37,672	5,614	31,527	....	160,209	7,388	167,597
2¼ feet	6,359	....	....	....	....	....	6,359	....	6,359
2 feet	163,156	3,234	351,733	14,166	127,623	1,593	641,512	18,993	660,505
20 inches	1,625	....	....	....	....	....	1,625	....	1,625
18 inches	21,383	430	20,251	1,526	8,042	430	49,676	2,386	52,062
15 inches	43,666	3,689	157,082	12,355	21,100	1,974	221,848	18,018	239,866
12 inches	273,741	5,052	505,191	30,079	200,442	5,976	955,473	41,107	996,580
Totals in Lineal Feet.	684,458	14,954	1,391,123	79,976	419,187	9,973	2,494,718	104,903	2,599,621
	699,412 Feet. 26.896 per cent.		1,471,099 Feet. 56.597 per cent.		429,110 Feet. 16.507 per cent.		473.48 Miles.	19.86 Miles.	492.37 Miles.

Of the above, $248\frac{33}{1000}$ miles are constructed of brick, and $244\frac{337}{1000}$ miles are of vitrified clay pipe.

LENGTH AND INTERIOR DIAMETER, IN FEET, OF SEWERS IN PLACE, DECEMBER 31, 1888, IN THE DIFFERENT WARDS OF THE CITY.

Wards.	9 Feet.	8 Feet.	7½ Feet.	7 Feet.	6½ Feet.	6 Feet.	5½ Feet.	5 Feet.	4½ Feet.	4 Feet.	3½ Feet.	3¼ Feet.	3 Feet.	2½ Feet.	2¼ Feet.	2 Feet.	20 Inch.	18 Inch.	15 Inch.	12 Inch.	Total.
1st								247		1,926			12,327	17,033	6,077	15,210			1,870	66,572	121,262
2d						1,480		4,255		670			3,648	15,280	282	25,369		985	1,320	41,446	94,735
3d										670			738	14,622		22,750		3,720	5,904	36,963	85,367
4th						704		1,058	1,261	1,061	916		5,057	24,784		27,376		5,176	8,516	38,383	114,292
5th						1,680		1,360	2,600	4,180	1,600		6,558	7,020		31,367		3,430	11,880	45,094	116,769
6th					2,132	2,807		6,070	3,532	3,695	1,685		10,446	13,973		44,318	1,625	8,502	17,962	50,365	167,112
7th								5,750	280	5,040	2,958		4,137	3,683		21,572			2,336	31,273	77,029
8th									3,955	4,000	2,323		1,863	2,545		20,085			4,403	36,206	75,380
9th	1,625						2,651		3,675	4,925	3,972		1,984	971		13,013		125	18,726	39,302	90,969
10th	8,003	2,493		1,462	1,380	8,308	1,463	3,380	6,114	12,856	8,404		6,876	6,215		15,683		667	40,003	35,888	159,195
11th									18,440	9,541			758	2,225		34,093		999	3,925	45,258	115,239
12th						50	2,656		4,075	10,260	10,430		14,020	10,725		63,596		10,665	35,994	96,157	258,689
13th										10,290	8,615	333	7,371	6,454		28,633		4,761	16,979	58,328	141,794
14th		1,320	3,972	1,350			1,370	5,620	6,355	3,245	665	332	658	4,113		27,842		4,230	22,460	37,372	120,904
15th	5,865	3,952				2,288	1,371			2,399	1,626		2,225	5,975		19,630		330	13,479	32,855	91,995
16th						1,494		5,210		5,275			2,265	382		16,778			9,371	27,433	68,208
17th						1,296		6,817	6,940	6,755			4,315			35,074			650	21,493	83,340
18th								10,775	4,011							32,845				31,034	78,665
19th								9,305	10,130	9,390			1,023			36,055			1,014	42,641	109,568
20th									2,220	3,000	2,739		3,168	6,710		22,622		5,010	12,121	35,201	92,791
21st									2,843	2,510	1,020		515	12,010		16,900		1,275	6,230	44,960	88,263
22d								2,765	655	970			2,179	7,525		22,499		1,526	355	33,795	71,959
23d						753		5,583		3,157			1,962	3,841		25,833			1,726	33,146	76,001
24th						3,301		5,537	2,615	2,591			4,531	1,441		41,362		661	2,642	35,415	100,096
Total Feet.	15,493	7,765	3,972	2,812	3,512	24,161	9,511	73,732	79,701	108,096	46,983	665	98,624	167,597	6,359	660,505	1,625	52,062	239,866	996,580	2,599,621

SEWERS CONSTRUCTED IN THE YEAR 1888 IN THE WEST DIVISION.

STREET.	FROM	TO	Diam. in Feet.	Length in Feet.
Adams	Kedzie avenue	Westward	2	100
Albany avenue	Colorado avenue	Monroe	1¼	162
Albany avenue	Warren avenue	Northward	1	150
Albany avenue	Jackson	Colorado avenue	1	574
Alport	Twenty-second	Twenty-first	1	580
Armour	Ohio	Erie	1	276
Albany avenue	Monroe	Madison	1	446
Augusta	California avenue	Drummond	7	1,350
Bryson	Shober	Westward	1	206
Bradley	Holt	Noble	1	612
Bickerdike	Ohio	Erie	1	272
Bradley	Elston avenue	Westward	1	190
Chicago avenue	Rockwell	Seymour	2	672
Chicago avenue	Oakley avenue	Western avenue	2	655
Chicago avenue	Seymour	Western avenue	1¼	671
Chicago avenue	California avenue	Rockwell	2½	1,344
Central Park avenue	Ogden avenue	Boulevard	4	3,006
Central Park avenue	Boulevard	Forquer	3½	2,530
Central Park avenue	Forquer	Jackson	3	2,675
Central Park avenue	Jackson	Madison	2½	1,290
California avenue	Cortez	Augusta	7½	447
California avenue	Augusta	Chicago avenue	4	1,380
Colorado avenue	Adams	Homan avenue	1	1,220
Coulter	Leavitt	Hoyne avenue	1¼	740
Clybourn place	Elkgrove avenue	Robey	1	630
Colorado avenue	Francisco	East and West	1	500
Dudley	Bloomingdale road	Clybourn place	1¼	650
Dudley	Armitage avenue	Clybourn place	2	662
Emily	Hoyne avenue	Eastward	1	540
Eighteenth	Wood	Lincoln	1¼	667
Erie	Leavitt	Oakley avenue	3	666
Elizabeth	Ohio	Erie	1	272
Fairfield avenue	Twelfth	Northward	1¼	800
Fairfield avenue	Twelfth	Southward	1¼	330
Fairfield avenue	330 feet south of Twelfth	Southward	1	570
Francisco	Colorado avenue	Monroe	1¼	125
Francisco	Warren avenue	Northward	1	160
Girard	Armitage avenue	Hervey	2	661
Gross Terrace	Colorado avenue	Madison	1	518
Homan avenue	Twenty-second	Ogden avenue	3	1,650
Homan avenue	Ogden avenue	Sixteenth	2½	1,042
Hoyne avenue	Division	Thomas	2	608
Hoyne avenue	Thomas	Emily	1¼	333
Hirsch	Maplewood avenue	Rockwell	1	340
Hinman	Ashland avenue	Blue Island avenue	1	206
Hinman	Laflin	Throop	1	1,204
Huron	Leavitt	Oakley avenue	1	668
Harvard	California avenue	Washtenaw avenue	2	670
Homan avenue	Lake	Fulton	2	590
Hastings	Robey	East	1¼	133
Hirsch	Leavitt	Shober	1	332

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Diam. in Feet.	Length in Feet.
Jane	Hoyne avenue	East	1	247
Jackson	Kedzie avenue	Homan avenue	2	1,338
Jackson	Central park avenue.	St. Louis avenue	2	630
Jackson	St. Louis avenue	Homan avenue	1	708
Kinzie	Ashland boulevard	East and West	4½	100
Kinzie	Leavitt	Westward	2½	1,067
Kedzie avenue	Kinzie	Boulevard	1½	525
Laughton	Collins	Oakley avenue	1¼	270
Laflin	Twenty-second	Hinman	1¼	292
Laflin	Hinman	Twenty-first	1	305
Laughton	Oakley avenue	Western avenue	1	671
Lake	Central park avenue.	Westward	1¼	630
Lake	Hamlin avenue	Eastward	1	877
Lincoln	Twelfth	Yeaton	1	325
Lincoln	Polk	Seldon	1	1,005
Milwaukee avenue	McGovern	Fullerton avenue	2	790
Madison	Central park avenue.	Crawford avenue	2	2,695
Milwaukee avenue	Myrtle	Cromwell	3	650
Milwaukee avenue	Cromwell	McGovern	2½	871
Milwaukee avenue	Armitage avenue	Perry avenue	4	959
Milwaukee avenue	Perry avenue	Myrtle	3½	828
Milwaukee avenue	Armitage avenue	Western avenue	1	380
Moore	Leavitt	Oakley avenue	1¼	660
Moore	Oakley avenue	Western avenue	1	670
Mendall	Clybourn place	Armitage avenue	1	638
Marshfield avenue	Polk	Southward	1	466
Norton	Polk	Southward	1	140
Oakley avenue	Hirsch	Southward	1	404
Oakley avenue	Frankfort	Hamburg	2	267
Oakley avenue	North avenue	Thompson	2	630
Oakley avenue	Thompson	Hirsch	1¼	665
Oakley avenue	Twelfth	Thirteenth	1	652
Oakley avenue	Erie	Huron	1½	335
Olive	Taylor	Ashland	1	400
Ohio	Bickerdike	Westward	1	140
Paulina	Wabansia avenue	Bloomingdale road	1¼	615
Pratt	Green	Sangamon	1	545
Phillips	Green	Sangamon	1	463
Paulina	Polk	Southward	1	410
Sacramento avenue	Warren avenue	Northward	1	125
Staunton	Lake	Randolph	1	214
Spaulding avenue	Jackson	Colorado avenue	1¼	190
Sixteenth	Ashland boulevard	Laflin	1	620
Seventeenth	Robey	Lincoln	1	635
Sacramento avenue	Harrison	Northward	1	270
Thomas	Hoyne avenue	Robey	1	631
Taylor	Washtenaw avenue	Eastward	1	550
Twelfth	Kedzie avenue	Albany avenue	2	666
Troy	Twelfth	Northward	1	540
Twelfth	Robey	Winchester avenue	1¼	320
Union place	Harrison	Congress	1	370

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Diam. in Feet.	Length in Feet.
Western avenue	Frankfort	Bremen	2	1,013
Western avenue	Alice place	Fullerton avenue	2	540
Western avenue	Alice place	Bremen	1	256
Walnut	Homan avenue	Westward	1	332
Washtenaw avenue	Ogden avenue	Northward	1¼	420
Washtenaw avenue	Twelfth	Southward	1¼	330
Washtenaw avenue	330 feet south of Twelfth	Southward	1	840
Washtenaw avenue	North avenue	Thompson	2	665
Washtenaw avenue	Thompson	Hirsch	1¼	665
Washtenaw avenue	Harvard	Taylor	1¼	335
Walnut	California avenue	Francisco avenue	1½	666
Walnut	Sacramento avenue	Francisco avenue	1¼	678
Walnut	Homan avenue	Eastward	1¼	670
Whipple	Van Buren	North of Jackson	1	640
Winchester avenue	Polk	Taylor	1	827
Winchester avenue	Taylor	Twelfth	1	764
Wabansia avenue	Paulina	Commercial	1	332
		Total		66,442

SEWERS CONSTRUCTED IN THE YEAR 1888 IN THE NORTH DIVISION.

STREET.	FROM	TO	Diam. in Feet.	Length in Feet.
Burton place	State	Astor	2	293
Blackhawk	Smith	Dayton	1½	430
Blackhawk	Dayton	Halsted	1	303
Belden avenue	Perry	Racine avenue	1	1,842
Belden avenue	Racine avenue	Seminary avenue	1¼	661
Belden avenue	Sheffield avenue	Eastward	1	210
Belden avenue	Sheffield avenue	Seminary avenue	1¼	665
Dayton	Blackhawk	North of Weed	1	605
Fullerton avenue	Osgood	East of Sheffield ave.	1¼	648
Fullerton avenue	Fremont	Westward	1	219
Fullerton avenue	Cleveland avenue	Clark	1	245
Jay	South of Belden ave.	Fullerton avenue	1	915
Locust	Townsend	Westward	1	150
Osgood	Webster avenue	Belden avenue	1	650
Ritchie place	Goethe	Banks	1	279
Sheffield avenue	Webster avenue	Fullerton avenue	2	1,300
Weed	Dayton	Eastward	1	212
Kemper place	Larrabee	Westward	1	225
		Total		9.862

SEWERS CONSTRUCTED IN THE YEAR 1888 IN THE SOUTH DIVISION.

STREET.	FROM	TO	Diam. in Feet.	Length in Feet.
Butler	Thirty-fifth	Southward	2½	347
Butler	Thirty-fifth	Northward	2	350
Butterfield	Thirty-third	Thirty-fourth	1	628
Calumet avenue	Egan avenue	Northward	1	304
Calumet avenue	Douglas avenue	Southward	1¼	675
Calumet avenue	675 ft. south of Douglas ave.	Southward	1	165
Deering	192 ft. north of Thirty-first	Northward	1	406
Fifth avenue	Thirty seventh	Northward	2	663
Groveland park ave.	Twenty-ninth	Twenty-eighth	1¼	455
James	Laurel	Eastward	1	545
Lowe avenue	Thirty-eighth	Egan avenue	1¼	616
Musprat	Springer	Thirty-third	1¼	337
Marshfield avenue	Douglas avenue	Thirty-fourth	1¼	636
Pier	Lake avenue	Eastward	1	166
Parnell avenue	Douglas avenue	Thirty-third	2	1,291
Parnell avenue	Thirty-third	Northward	1¼	533
Parnell avenue	Thirty-first	South of Thirty-second	1	760
Robey	Archer avenue	Thirty-third	3	775
Shields avenue	Douglas avenue	Southward	2½	424
Shields avenue	Douglas avenue	Northward	1½	430
Springer	Ullman	Waterville	1	932
Thirty-third	Robey	Champlain	2½	1,003
Ullman	Thirty-fourth	Northward	2	893
Ullman	Thirty-third	Southward	1¼	100
Wahl	Springer	Thirty-third	1¼	337
		Total		13,771

GRAND TOTAL SEWERS CONSTRUCTED IN 1888.

West Division	66,442 feet.
North Division	9,862 feet.
South Division	13,771 feet.
Grand total	90,075 feet.

WING SEWERS PUT IN IN THE YEAR 1888. WEST DIVISION.

STREET.	FROM	TO	Diameter in Feet.	Length in Feet.
Albany avenue.	Manhole in Colorado av	Southward	1	39
Albany avenue	Manhole in Fulton	Southward	1	49
Albany avenue	Manhole in Fulton	Northward	1¼	53
Albany avenue	Manhole in Walnut	Northward	1	33
Alport avenue	Manhole in Twenty-second	Southward	1	41
Ambrose	Manhole in Western avenue	Eastward	1¼	44
Birch	Manhole in Kendall	Eastward	1	40
Campbell avenue	Manhole in Polk	Southward	1	37
Clarinda	Manhole in Samuel	East and West	1	74
Cornelia	Manhole in Samuel	East and West	1	78
Clarinda	Manhole in Rumsey	East and West	1	76
Cornelia	Manhole in Rumsey	East and West	1	72
Campbell avenue	Manhole in Twelfth	North and South	1	108
Emily	Manhole in Rumsey	East and West	1	72
Emily	Manhole in Samuel	East and West	1	75
Fifteenth	Manhole in Western avenue	East and West	1¼	80
Francisco	Manhole in Fulton	Northward	1¼	58
Francisco	Manhole in Fulton	Southward	1	58
Francisco	Manhole in Walnut	North and South	1	60
Francisco	Manhole in Wilcox	North and South	1	70
Francisco	Manhole in Adams	North and South	1	77
Hoyne avenue	Manhole in Thirteenth	North and South	1	84
Hoyne avenue	Manhole in Twenty-second.	Northward	1	36
Hoyne avenue	Manhole in Kinzie	Northward	1¼	26
Hoyne avenue	Manhole in Blue Island av.	Southward	2	58
Hinman	Manhole in Western avenue	Westward	1	52
Irving avenue	Manhole in Thirteenth	Southward	1	41
Jane.	Manhole in Samuel	East and West	1	73
Jane	Manhole in Rumsey	East and West	1	78
Lincoln	Manhole in Thirteenth	North and South	1	84
Lincoln	Manhole in Blue Island av.	Northward	1	58
Lincoln	Manhole in Blue Island av	Southward	2	58
Leavitt	Manhole in Kinzie	Northward	1¼	14
Lincoln	Manhole in Twenty-second.	Southward	1	34
Moore	Manhole in Western avenue	Westward	1¼	54
Monroe	Manhole in Colorado av	Northward	1	60
Nineteenth	Manhole in Western avenue	Westward	1¼	52
Oakley avenue	Manhole in Twenty-second.	Southward	1	37
Oakley avenue	Manhole in Blue Island av.	North and South	1¼	119
Parmelee	Manhole in Western avenue	Eastward	1	40
Paulina	Manhole in Fifteenth	Southward	1	39
Rebecca	Manhole in Western avenue	Westward	1¼	40
Robey	Manhole in Kinzie	Northward	2	24
Robey	Manhole in Blue Island av.	North and South	2	121
Rice	Manhole in Twenty-second.	Southward	1¼	38
Robey	Manhole in Twenty-second.	Southward	1¼	37
Seventeenth	Manhole in Western avenue	Westward	1¼	52
Sixteenth	Manhole in Western avenue	Westward	1¼	52
Sacramento avenue.	Manhole in Fulton	North and South	1	106

STREET.	FROM	TO	Diameter in Feet.	Length in Feet.
Sacramento avenue.	Manhole in Walnut	North and South	1	63
Superior	Manhole in Leavitt	Westward	1	46
Sacramento avenue.	Manhole in Colorado av.	Northward	1¼	42
Tallman avenue.	Manhole in Fulton	North and South	1	70
Twentieth	Manhole in Western avenue	Westward	1¼	54
Twenty-first	Manhole in Western avenue	Westward	1¼	54
Troy	Manhole in Colorado av.	Southward	1	40
Tallman avenue	Manhole in Twelfth	Southward	1	54
Wabansia avenue	Manhole in Wood	East and West	1	86
Washtenaw avenue	Manhole in Twelfth	Northward	1¼	55
Washtenaw avenue.	Manhole in Adams.	Northward	1	40
Wood	Manhole in Blue Island av.	Southward	2	58
Total				3,532

WING SEWERS PUT IN IN THE YEAR 1888—SOUTH DIVISION.

STREET.	FROM	TO	Diameter in Feet.	Length in Feet.
Butterfield	Manhole in Twenty-third	Southward	1	34
Bonfield avenue	Manhole in Lyman	Southward	1	42
Elias	Manhole in Lyman	Northward	1	42
Keeley	Manhole in Lyman	Southward	1	42
Lowe avenue	Manhole in Thirty-first	Southward	2	37
Mill	Manhole in Ashland boul.	Eastward	1	40
Sullivan square	Manhole in Lyman	Southward	1	42
Springer avenue	Manhole in Laurel	Westward	1	40
Thirty-second	Manhole in Wallace	Westward	1	35
Thirty-third	Manhole in Wallace	East and West	1	70
Thirty-sixth	Manhole in Wallace	East and West	1	80
Thirty-eighth	Manhole in Wallace	East and West	1	81
Thirty-third	Manhole in Ashland boul.	Eastward	1	40
Thirty-fourth	Manhole in Ashland boul.	East and West	1	83
Thirty-sixth	Manhole in Ashland boul.	Westward	1	35
Thirty-third	Manhole in Laurel	East and West	1	80
Thirty-seventh	Manhole in Ashland boul.	Westward	1	40
Thirty-eighth	Manhole in Ashland boul.	Westward	1	40
Thirty-eighth	Manhole in Ashland boul.	Westward	1	40
Thirty-sixth	Manhole in Laurel	Eastward	1	40
Thirty-seventh	Manhole in Laurel	Eastward	1	40
Thirty-seventh court.	Manhole in Laurel	Eastward	1	40
Thirty-eighth	Manhole in Laurel	Eastward	1	40
Thirty-eighth court.	Manhole in Laurel	Eastward	1	40
Thirty-second	Manhole in Laurel	Eastward	1	40
Total				1,183

WING SEWERS PUT IN IN THE YEAR 1888—NORTH DIVISION.

STREET.	FROM	TO	Diameter in Feet.	Length in Feet.
Clyde.............	Stub in Center............	Southward......	1	20
Goethe............	Manhole in Dearborn ave..	Eastward.......	1	39
Seminary avenue ...	Stub in Center............	Southward......	1	18
Ward..............	Manhole in Webster ave...	Southward..... .	1	34
Total	....	....	....	111

GRAND TOTAL WING SEWERS PUT IN IN 1888.

West Division.........................	3,532 feet.
South Division	1,183 feet.
North Division.......................	111 feet.
Grand total	4,826 feet.

MAN-HOLES AND CATCH-BASINS RAISED TO GRADE ON STREETS ORDERED IMPROVED, TOGETHER WITH COST OF SAME, DURING THE YEAR 1888, AS FOLLOWS:

No.	Description of work done.	Cement.	Brick.	Covers.				Straight Pipe.				Curv. Pipe.	Junctions.		Boxes.	Cost.		TOTAL COST.
		Barrels.		Iron.	Wood	Mil-w'kee.	Small Iron.	4 in. No. ft.	6 in. No. ft.	9 in. No. ft.	12 in. No. ft.	9 in. No. ft.	6 in.	9 in.	No. ft.	Material.	Labor and Teaming.	
2,250 2,231	Man-holes raised to grade, Catch-basins raised to grade	3,002	970,315	1,692	675	12	26	16	180	2,035	15	122	9	1	2,364	$25,775 09	$19,460 50	$45,235 59
																Less by misc. credits.		175 00
																Total cost to city,		$45,060 59

AMOUNT EXPENDED FOR REPAIRS OF SEWERS, MAN-HOLES AND CATCH-BASINS, ALSO MAN-HOLE AND CATCH-BASIN COVERS, DURING THE YEAR 1888, AS FOLLOWS:

No.	Description of work done.	Cement.	Brick.	Covers.		Straight Pipe.				Curved Pipe.			J'ct's		Boxes	Slants	COST.		
				Iron.	Wood	6 in.	9 in.	12 in.	15 in.	6 in.	9 in.	12 in.	9x12	9x6	No. ft.	9 in.	Material.	Labor.	Total Cost
16 27	Man-holes repaired Catch-basins repaired	23	12,180	8	25			34				12							
18	Feet of 4-inch drain																		
58	Feet of 6-inch drain	2½	60			26				4				1					
753	Feet of 9-inch drain	49½	5,150		4	6	628	1			64		15	12	10	1			
50	Feet of 12-inch drain	1						6				4					$4,627 76	$4,515 00	$9,142 76
5	Feet of 15-inch drain								5										
707	Feet of 2-foot sewer	74	23,000		1												Less by misc. credits,		420 38
20	Feet of 3-foot sewer	4	2,000		1														
30	Feet of 5-foot sewer	31	8,000		1										32½	2½	Total cost to city,		$8,722 38

	Cement.	Brick.	Iron Covers.	Wood Covers.	Iron Lids.	Wood Lids.	M-H.&C.-B. Tops.	Grates.
Man-hole and catch-basin covers repaired	135	13,090	35	631	113	2,145	986	321

SUMMARY OF RECEIPTS AND EXPENDITURES IN THE HOUSE DRAIN DEPARTMENT DURING THE YEAR 1888.

DIVISIONS	PERMITS ISSUED				Receipts.	Expenditures.
	12-inch.	9-inch.	6-inch.	Total.		
West	1	64	1,868	1,933	$10,037 50	
South	2	45	587	634	3,455 00	
North		20	255	275	1,467 50	
Licenses					815 00	
Special Assessments					26,397 50	
Miscellaneous Credits					99 83	
Totals	3	129	2,710	2,842	$42,272 23	
Superintendence, Inspection and Office Supplies						$22,221 35
Junctions and Slants set in new sewers						5,467 80
Junctions and Slants set in old sewers						358 14
Surplus transferred to Maintenance						14,225 04
Total						$42,272 33

NUMBER OF HOUSE DRAINS PUT IN PLACE DURING THE YEAR 1888 UNDER SPECIAL ASSESSMENT.

Divisions.	Total Number of Drains.	Total Length in Feet.	Total Cost.	Average Cost per Drain.	Average Length of Drain in feet	Average Cost per Foot.
West	3,568	115,359	$25,844 78	$7 24	32.33	22.40
South	1,015	26,305	5,617 68	5 53	25.92	21.36
North	727	17,083	6,463 69	8 89	23.50	37.84
Totals	5,310	158,747	$37,926 15	$7 14	29.90	23.90

Making a total of 30.07 miles of 6-inch drains laid by contract and paid for by special assessment.

SEWERS AND CATCH-BASINS CLEANED IN THE THREE DIVISIONS DURING THE YEAR 1888.

METHOD.	SOUTH DIVISION.		WEST DIVISION.		NORTH DIVISION.		TOTAL.		Average Cost per 100 Feet.
	Feet Cleaned.	Cost.	Feet Cleaned.	Cost.	Feet Cleaned.	Cost.	Feet Cleaned.	Cost.	
Flushing......	108,850	$1,143 70	254,075	$2,358 84	139,775	$1,347 20	502,700	$ 4,849 74	$ 96
Iron Scraper...	184,702	5,627 37	154,600	4,858 81	79,400	600 67	418,702	11,086 85	2 65
Wood Scraper.	57,700	1,446 51	264,900	4,620 40	72,760	1,483 12	395,360	7,450 03	1 88
Totals....	351,252	$8,217 58	673,575	$11,738 05	291,935	$3,430 99	1,316,762	$23,386 62	
Opening inlets to catch-basins, attending complaints, etc......								3,177 23	
							Total..........	$26,563 85	
	No. of.	Cost.	No. of.	Cost.	No. of.	Cost.	No. of.	Cost.	Average Cost per Basin.
Catch-basins cleaned	3,872	$7,905 80	5,048	$12,446 21	2,009	$4,351 99	10,929	$24,704 00	$2 26
Cost of cleaning sewers and catch-basins......								$51,267 85	
Miscellaneous bills, repairs of tools, etc......								1,154 56	
TOTAL COST OF CLEANING SEWERS AND CATCH-BASINS......								$52,422 41	

STATEMENT SHOWING THE VALUE OF THE MATERIAL AND STOCK ON HAND AND THE UNEXPENDED BALANCE STANDING TO THE CREDIT OF THE SEWERAGE FUND, JANUARY 1, 1889:

Wooden covers and lumber	$ 6,160 00
Iron covers	5,162 45
Sewer pipe	2,780 34
Brick	318 50
Sand	110 00
Cement	185 00
Stock (machinery, tools etc.)	5,500 00
Unexpended balance	38,208 54
Of this amount there is due private parties holding certificates for money advanced to construct sewers	13,680 00

During the year, in addition to the extension of the general system, the sewer in Central Park avenue has been built from Ogden avenue to Madison street, and in Madison street from Central Park avenue to Crawford avenue. This completes the sewer in Madison street from the lake to the city limits. The Milwaukee avenue sewer has been built from Western avenue to Fullerton avenue. This also completes the Milwaukee avenue sewer to the city limits. The Armitage avenue main sewer has been extended to the east line of Humboldt Park boulevard at Augusta street this year, and should be continued west as rapidly as the city's finances will permit, as the territory lying between Kedzie and Crawford avenues and Kinzie street and North avenue is building up very rapidly, and there is no way of draining this district until this main sewer is extended.

A large portion of that part of the Sixth Ward west of Ashland boulevard is yet unsewered, and quite compactly built up in many blocks. Nearly every lot is built upon, and there is no way of disposing of the sewerage except by running it into the street gutters, which, in most cases, have little, if any fall. This district should get its full share of sewers built from the next appropriation.

In closing this report, allow me to acknowledge my obligations for the courtesy and co-operation of the Commissioner and officers of other bureaus of this Department, and to the efficiency and faithfulness of the employes of this bureau.

Respectfully submitted,

O. H. CHENEY,

Superintendent Sewers.

REPORT

OF THE

Bureau of Streets

CITY OF CHICAGO.

BUREAU OF STREETS.

CHICAGO, December 31, 1888.

HON. GEO. B. SWIFT,

Commissioner of Public Works.

DEAR SIR:—I have the honor to submit herewith, the Thirteenth Annual Report of the Bureau of Streets, for the year ending December 31, 1888.

It embraces in detail a review of the work accomplished during the year, under the supervision of this bureau; also street railway extensions, and a complete list of streets occupied by railway tracks in the several divisions of the city, operated and controlled by the different horse and cable railway companies.

The improvement of streets from 1835, and the first pavement laid in 1855 to date, alphabetically arranged, is also embraced herein.

The following tables show the progress made in Street and Alley improvements, the character of pavement laid on each street, the total length in lineal feet and miles, as well as surface measurement in square yards.

STREETS IMPROVED,

NAME OF STREET.	FROM	TO	COMMENCED.
Alley between Clark and Dearborn	Goethe	Schiller	July 23, 1888
Alley between Superior and Huron	Cass	State	Private.
Alley between Ohio and Indiana	La Salle avenue	Rush	Sept. 26, 1888
Alley north of Ohio and east of Rush			Private.
Belden avenue	Cleveland avenue	Halsted	Oct. 21, 1887
Burling	Webster avenue	Belden avenue	June 12, 1888
Burling	North avenue	Willow	July, 1888
Blackhawk	Sedgwick	Halsted	July 7, 1888
Burling	Willow	North avenue	Oct. 30, 1888
Centre	Halsted	Racine avenue	
Carl	Wells	LaSalle avenue	May 21, 1888
Chestnut	State	Rush	May 25, 1888
North Clark	Chicago avenue	Chicago River	Sept. 14, 1888
Dearborn avenue	Kinzie	North Water—R. R.	Private.
Elm	LaSalle avenue	Clark	June 16, 1888
Erie	St. Clair	600 feet east	May 28, 1888
Franklin	Schiller	North avenue	June 11, 1888
Franklin	Sigel	Schiller	Aug. 21, 1888
South half Fullerton avenue	Halsted	Clark	July 9, 1888
Fremont	Centre	Belden avenue	July 12, 1888
Hammond	Menomonee	Wisconsin	June 7, 1888
Hurlbut	Clybourn avenue	North avenue	July 10, 1888
Halsted	Division	North branch river	
Hudson avenue	North avenue	Centre	Sept. 3, 1888
Halsted	Division	Clybourn avenue	Oct. 10, 1888
Hudson avenue	Sigel	North avenue	Oct. 4, 1888
Halsted	Clybourn avenue	Fullerton avenue	Oct. 4, 1888
Kingsbury	Erie	Chicago avenue	June 11, 1888
La Salle avenue	North Water	River and warehouse	Private.
Lincoln avenue	Wells	Centre	June 12, 1888
Larrabee	Division	North avenue	June 18, 1888
Market	Schiller	North avenue	July 16, 1888
Menomonee	Clark	Sedgwick	Aug. 1, 1888
Maple	LaSalle avenue	West terminus	Private.
Ontario	St. Clair	600 feet east	May 30, 1888
Oak	Clark	Dearborn avenue	July 8, 1888
Orchard	North avenue	Fullerton avenue	June 15, 1888
Pine	Superior	Chicago avenue	June 16, 1888
Pearson	Wells	West terminus	
Rush	Illinois	Ohio	Aug. 1, 1888
Sigel	Sedgwick	Cleveland avenue	July 12, 1888
State	Chicago River	Chicago avenue	July 23, 1888
Sherman place	Pine	**East line, lot 11, Butler sub.**	Aug. 20, 1888
St. Clair	Indiana	Michigan	Nov. 1, 1888
Tower place	Chicago avenue	Pearson	Oct. 15, 1888
Vedder	Division	Halsted	Aug. 5, 1888
Vedder	Division	Halsted	Sept. 6, 1888
Vine	North avenue	Willow	Oct. 11, 1888
Wells	Division	North avenue	June 26, 1888
Whiting	Market	Western terminus	June, 1887
Wells	Kinzie	Chicago River	July 13, 1888
Wisconsin	Sedgwick	Larrabee	July 9, 1888
Wells	North avenue	Clark	Sept. 11, 1888

NORTH DIVISION, 1888.

FINISHED.	CONTRACTOR.	NATURE OF IMPROVEMENT.	SQUARE YARDS.	LINEAL FEET.
Aug. 18, 1888	McAdam & Amberg	Wood C. G. Cedar blocks	1,528.01	687.60
Contract.	J. B. Smith & Co.	Wood C. G. Cedar blocks	258.40	193.80
Oct. 17, 1888	R. F. Conway	Wood C. G. Cedar blocks	2,893.53	1,471.29
Contract.	....	Wood C. Cedar blocks	153.00	138.00
May 7. 1888	Sackley, Daley & Co.	C. G. Cedar blocks	6,216.83	1,865.05
June 15, 1888	Western Paving & Supply Co.	C. G. Cedar blocks	1,983.82	595.15
Aug. 1, 1888	Olaf Vider	Filling intersections	....	....
Aug. 20, 1888	J. B. Smith & Co.	C. F. Cedar blocks	11,328.83	2,683.14
Nov. 3, 1888	J. B. Smith & Co.	G. Cedar blocks	4,256.56	1,008.13
....	R. F. Conway	C. Cedar blocks	9,396.70	2,819.01
June 4, 1888	J. B. Smith & Co.	C. G. Cedar blocks	1,257.52	353.62
June 26, 1888	J. B. Smith & Co.	C. G. Cedar blocks	1,690.25	380.41
Oct. 21, 1888	Western Paving & Supply Co.	Concrete F. Cedar blocks	11,954.48	3,396.16
Contract.	....	Cedar blocks	2,730.00	537.80
June 23, 1888	J. B. Smith & Co.	C. G. Cedar blocks	1,151.85	345.55
June 8, 1888	J. B. Smith & Co.	C. G. Cedar blocks	2,308.20	609.20
June 16, 1888	J. B. Smith & Co.	G. Cedar blocks	5,132.92	1,215.69
Aug. 23, 1888	J. B. Smith & Co.	G. Cedar blocks	1,289.37	307.00
Sept. 5, 1888	Olaf Vider	C. G. Cedar blocks	4,648.29	2,201.82
Aug. 22, 1888	R. F. Wilson	Curbing	....	2,001.66
June 11, 1888	Western Paving & Supply Co	C. G. Cedar blocks	2,121.46	636.44
July 28, 1888	J. B. Smith & Co	C. F. Cedar Blocks	8,406.11	2,225.15
Oct. 16, 1888	A. J. McBean & Co	C. wall G. Cedar blocks	3,493.30	1,122.85
Oct. 30, 1888	J. B. Smith & Co.	C. Cedar blocks	10,232.30	2,708.55
Oct. 30, 1888	J. B. Smith & Co	G. Cedar blocks	6,119.98	2,484.43
Nov. 4, 1888	J. B. Smith & Co.	C. F. Cedar blocks	5,923.78	1,568.06
Nov. 12, 1888	J. B. Smith & Co.	G. Cedar blocks	14,264.85	3,366.11
June 20, 1888	Olaf Vider	G. Cedar blocks	4,127.78	928 75
Contract.	....	G. Cedar blocks	2,231.80	436.65
July 18, 1888	J. B. Smith & Co.	C. F. Cedar blocks	5,210.69	1,563.20
Aug. 15, 1888	J. B. Smith & Co.	C. wall F. Cedar blocks	6,565.91	2,638.00
Aug. 3, 1888	J. B. Smith & Co.	C. F. Cedar blocks	4,040.41	1,212.12
Oct. 4, 1888	J. B. Smith & Co.	C. Cedar blocks	3,017.97	1,180.95
Contract.	....	G. Cedar blocks	495.27	117.30
June 1, 1888	J. B. Smith & Co.	C. G. Cedar blocks	2,274.94	623.27
July 18, 1888	J. B. Smith & Co.	C. G. Cedar blocks	1,260.80	331.79
Oct. 20, 1888	Olaf Vider	C. G. Cedar blocks	17,643.20	5,035.63
June 20, 1888	J. B. Smith & Co.	G. Cedar blocks	945.67	283.70
July 26, 1888	Olaf Vider	Curb Wall	....	....
Aug. 17, 1888	Western Paving & Supply Co	G. Cedar blocks on concrete	5,027.09	806.03
July 21, 1888	J. B. Smith & Co.	C. G. Cedar blocks	1,946.78	625.75
Aug. 25, 1888	LaBounty & Netterstrom	C. G. Cedar blocks on concrete	8,573.14	3,507.19
Aug. 30, 1888	LaBounty & Netterstrom	C. G. Cedar blocks	289.50	162.84
Nov. 17, 1888	J. B. Smith & Co.	C. G. Cedar blocks.	2,286.79	1,083.22
Nov. 13, 1888	J. B. Smith & Co.	C. F. Cedar blocks	730.00	219.00
Aug. 25, 1888	McAdam & Amberg	C. and filling	....	....
Sept. 21, 1888	J. B. Smith & Co	G. Cedar blocks	8,375.49	2,093.87
Nov. 14, 1888	Olaf Vider	C. Cedar blocks	2,683.36	1,006.26
July 11, 1888	J. B. Smith & Co.	G. Cedar blocks	9,321.85	2,693.31
Aug. 6, 1888	Olaf Vider	C. wall and filling	....	223.90
July 18, 1888	Olaf Vider	Cedar blocks	890.55	267.16
Aug. 29, 1888	James Lyman & Co.	Curbing	....	1,124.00
Sept. 22, 1888	A. J. McBean & Co	F. Cedar blocks	7,177.21	2,062.38
	Total		213,856.34	67,147.94

Lineal feet paving	63,798.38	feet, or	12.08	miles.
On unpaved streets, lineal feet curbing	3,349.56	feet, or	0.63	miles.
Grand total	67,147.94	feet, or	12.71	miles.

STREETS IMPROVED,

NAME OF STREET.	FROM	TO	COMMENCED.
Alley bet. Cottage Grove and Ellis Park	Thirty-sixth	Thirty-seventh	Nov. 27, 1888
Alley w. 120, Block 142 School Section.	....	....	May 10, 1888
Alley bet. Michigan and Wabash aves.	Lake	Randolph	Private.
Alley bet. Groveland and Lake Park aves	Thirty-second	Thirty-third	July 11, 1888
Alley between Randolph & Washington	Franklin	Market	Private.
Alley between Prairie and Calumet aves.	Twenty-first	Twenty-second	July 21, 1888
Alley bet. Michigan and Indiana aves.	Thirty-first	100 feet north of Thirty-second	July 18, 1888
Alley bet. Cot. Gr. & Groveland Park ave.	Thirty-second	Thirty-third	July 17, 1888
Alley between Fifth avenue and Sherman	Van Buren	Harrison	Aug. 13, 1888
Alley between Indiana and Prairie aves.	Twenty-sixth	Twenty-ninth	Oct. 8, 1888
Alley bet. Michigan and Indiana aves.	Twenty-sixth	Twenty-ninth	Dec. 1, 1888
Alexander.	Wentworth avenue	Stewart avenue	Sept. 25, 1888
Ashland avenue	Archer avenue	Egan avenue	....
Butterfield	Thirtieth to Thirty-third. Thirty-fifth to Egan av.	Egan avenue	Oct. 1, 1888
Butterfield	Thirty-third	Thirty-fifth	Oct. 1, 1888
Dearborn.	Sixteenth	Twenty-second	July 26, 1888
Douglas avenue	South branch river	Archer avenue	Aug. 15, 1887
Dearborn	Adams	Monroe	....
Dearborn	Madison	Washington	....
North half Egan avenue	State	Wentworth avenue	Sept. 12, 1887
Eighteenth	Wabash avenue	Fifth avenue	Oct. 17, 1888
Forrest avenue	Douglas avenue	Egan avenue	Aug. 12, 1887
Fifth avenue	Twenty-sixth	Thirty-first	June 10, 1888
Fifth avenue	Polk	Taylor	Nov. 24, 1888
Franklin	Madison	Lake	....
Jackson	Fifth avenue	240 feet east of Market	Aug. 18, 1888
Jackson	Clark	LaSalle on south side of Clark to Pacific avenue	....
La Salle	Thirty-first	Egan avenue	Oct. 1, 1887
La Salle	Twenty-sixth	Thirty-first	May 28, 1888
La Salle	Monroe	Adams	Aug. 25, 1888
Michigan avenue	Jackson	Chicago river	July 24, 1888
Madison	Dearborn	80 feet east	....
Portland avenue	Archer avenue	Twenty-sixth	Oct. 1, 1887
Randolph	Wabash avenue	Michigan avenue	May 12, 1888
Randolph	Clark	South branch river	June 10, 1888
Thirty-fourth	State	Butterfield	May 29, 1888
Twentieth	Wabash avenue	Calumet	June 11, 1888
Third avenue	Twelfth	Fourteenth	July 7, 1888
Van Buren	Wabash avenue	Fifth avenue	Nov. 7, 1888
Wallace	Archer avenue	Thirty-first	Sept. 15, 1887
South Water	Fifth avenue	Lake	Nov. 5, 1888
Wallace	Thirty-first	Thirty-ninth	....

SOUTH DIVISION, 1888.

FINISHED.	CONTRACTOR.	NATURE OF IMPROVEMENT.	SQUARE YARDS.	LINEAL FEET.
Dec. 1, 1888	Olaf Vider	Wood, C. G. Cedar blocks	805.98	462.00
May 19, 1888	Summers & Co	Granite blocks	194.84	120.50
Contract		Granite blocks	184.00	138.00
Aug. 5, 1888	McAdam & Amberg	Wood, C. G. Cedar blocks	1,073.31	619.89
Contract	McAdam & Amberg	Granite blocks	150.00	150.00
Aug. 6, 1888	Sackley, Daley & Co	Wood C. G. Cedar blocks	805.81	424.90
Aug. 10, 1888	McAdam & Amberg	Wood C. G. Cedar blocks	1,114.26	528.50
Aug. 2, 1888	McAdam & Amberg	Wood C. G. Cedar blocks	929.23	541.51
Aug. 29, 1888	J. B. Smith & Co	Wood C. G. Cedar blocks	1,072.66	808.97
Nov. 22, 1888	McAdam & Amberg	Wood C. G. Cedar blocks	2,949.80	1,523.00
Dec. 6, 1888	R. F. Conway	Wood C. G. Cedar blocks	2,867.93	1,486.00
Oct. 17, 1888	J. B. Smith & Co.	C. F. Cedar blocks	2,893.53	1,471.29
	A. J. McBean & Co	Curbing and filling		5,000.00
Nov. 26, 1888	A. J. McBean & Co	C. Cedar blocks	16,486.23	4,620.00
	A. J. McBean & Co	Curbing		1,320.00
Aug. 7, 1888	M. C. & J. Duffy	G. Cedar blocks	10,258.81	2,423.00
Oct. 25, 1888	Sackley, Daley & Co	C. F. Cedar blocks	24,002.66	5,684.84
	City	Repaving Granite blocks	1,647.82	436 19
	City	Repaving Granite blocks	1,495.85	395.96
May 12, 1888	A. J. McBean & Co.	C. F. Cedar blocks	2,043.59	1,284.00
Oct. 23, 1888	A. J. McBean & Co	G. Cedar blocks	6,197.03	1,444.90
June 12, 1888	R. F. Wilson	C. G. Macadam	10,763.90	2,549.30
Sept. 22, 1888	A. J. McBean & Co.	C. F. Cedar blocks	11,466.60	2,715.77
Nov. 30, 1888	J. B. Smith & Co	G. Cedar blocks on concrete	2,060.56	796.17
	James Conlan	G. Granite blocks	4.322.00	838.80
Sept. 14, 1888	James Lyman & Co.	G. Granite blocks	2,171.69	517.09
	Sackley, Daley & Co	Granite blocks	1,050.28	248.75
June 18, 1888	R. F. Conway	C. F. Cedar blocks	21,927.41	5,193.33
Aug. 9, 1888	J. B. Smith & Co.	C. F. Cedar blocks	10,996.89	2,604.53
Sept. 14, 1888	C. Gaffney	G. Granite blocks	2,192.88	411.60
Oct. 16, 1888	R. F. Conway	C. F. Granite blocks.	17,349.50	3,784.11
	James Lyman & Co	Granite blocks	119.89	33.72
May 21, 1888	J. B. Smith & Co.	C. F. Cedar blocks	8,975.98	2,692.79
June 9, 1888	James Conlan	G. Granite blocks	1,352.75	380.46
July 12, 1888	R. F. Conway	G. Granite blocks	6,718.30	1,889.52
July 16, 1888	R. F. Wilson	Macadam	2,305.46	546.03
July 23, 1888	James Lyman & Co.	C. G. Macadam	5,891.50	1,573.96
July 26, 1888	R. F. Conway	C. G. Granite blocks.	6,200.85	1,217.18
Dec. 4, 1888	James Conlan	G. Granite blocks	5,223.43	2,156.46
Oct. 17, 1888	Wm. Kinsella	C. F. Cedar blocks	14,423.46	4,290.03
Nov. 29, 1888	Sackley & Peterson	G. Granite blocks	4,849.61	915.02
	A J. McBean & Co	Curbing and filling		5,000.00
	Totals		217,535.78	71,238.07

Lineal feet paving	59,918.07	feet, or 11.34 miles.
On unpaved streets, lineal feet curbing	11,320	feet, or 2.14 miles.
Grand total	71,238.07	feet, or 13.48 miles.

STREETS IMPROVED,

NAME OF STREET.	FROM	TO	COMMENCED.
Alley north, Block 3, Union Park add	Bishop court	Sheldon	May 27, 1888
Alley north, east & west, So. of Randolph	Curtis	May	June 25, 1888
Alley north, ½ Block 53	Robey	Hoyne avenue	July 2, 1888
Alley north and south, in Block 36	Congress	Harrison.	July 5, 1888
Alley Block 69, Orig. Town	Union	Meridian	July 26, 1888
Alley Block 2, Union Park addition	Sheldon.	**East line Lots 9 & 10 Block 2**	July 27, 1888
Alley	Bismark court	Huron	Aug. 28, 1888
Alley in Block 49, C. T. Sub. Section 7.	Nortn & South Alley	Paulina	Nov. 19, 1888
Armitage avenue	Elston avenue	Western avenue	
Artesian avenue.	Lake	**P., C. & St. L. R. R., Kinzie**	June 12, 1888
Aberdeen	Taylor	Eleventh	Aug. 1, 1888
Ashland avenue	Twenty Second	Chicago river	Oct. 24, 1888
Arthington place	Center avenue	Lytle	Nov. 23, 1888
Adams	Rockwell	Sacramento	July 19, 1888
Brigham	Ashland avenue	Wood	1887
Bismark court	Noble	Eastern terminus	May 7, 1888
Brown	Fourteenth	Wright	June 8, 1888
Boston avenue	Desplaines	Halsted	June 26, 1888
Bryson	Lincoln	Robey	June 25, 1888
Bickerdike	Indiana	Ohio	June 1, 1888
Bickerdike	Ohio	Chicago avenue	Oct. 1, 1888
Blue Island avenue	Ashland avenue	Western avenue	May 1, 1888
Bradley	Holt	Elston avenue	Aug. 25, 1888
Canal	Twelfth	Sixteenth	June, 1, 1888
Canal	Sixteenth st. viaduct	Eighteenth	June 21, 1888
Carpenter	Washington	Madison	June 27, 1888
Canal	Madison	Lake	May 25, 1888
Chase	Chicago avenue.	Cornell	June 26, 1888
Cleaver	Milwaukee avenue	Bradley	Aug. 4, 1888
Crittenden	Noble	Currier	Aug. 27, 1888
Clinton	Milwaukee avenue	Kinzie	Oct. 2, 1888
Cork	Ashland boulevard	Paulina	June 30, 1888
Canal	Van Buren	Harrison	Oct. 21, 1888
Cicero court	Congress.	Harrison	Aug. 15, 1888
Congress	Western avenue	Campbell avenue	Aug. 7, 1888
Colorado avenue	Madison	Jackson	July 2, 1888
Division	Lincoln	Western avenue	Aug. 25, 1887
Desplaines	Carroll avenue	Monroe	June 11, 1888
Eleventh	Morgan	May	June 3, 1888
Fox place	Elston	**Chicago & North-Western Ry.**	June, 1, 1888

WEST DIVISION, 1888.

FINISHED.	CONTRACTOR.	NATURE OF IMPROVEMENT.	SQUARE YARDS.	LINEAL FEET.
June 6, 1888	W. F. Hair	Wood C. Cedar blocks	356.18	325.11
July 14, 1888	McAdam & Amberg	Wood C. G. Cedar blocks	404.81	253.00
July 20, 1888	McAdam & Amberg	Wood C. G. Cedar blocks	1,025.15	599.50
July 25, 1888	McAdam & Amberg	Wood C. G. Cedar blocks	748.00	330.00
Aug. 3, 1888	J. B. Smith & Co	Wood C. G. Cedar blocks	213.90	198.00
Aug. 12, 1888	J. B. Smith & Co	Wood C. G. Cedar blocks	435.79	274.60
Nov. 19, 1888	J. B. Smith & Co	Wood C. G. Cedar blocks	276.24	130.85
Nov. 30, 1888	R. F. Conway	Wood C. G. Cedar blocks	920.33	460.16
....	McAdam & Amberg	Curbing and filling	....	5,000.00
Aug. 25, 1888	R. F. Conway	C. F. Cedar blocks	5,138.42	1,217.00
Sept. 21, 1888	R. F. Conway	C. F. Cedar blocks	1,565.94	370.88
Nov. 17, 1888	Wm. Kinsella	Planking 16 feet wide	....	2,465.00
Nov. 30, 1888	A. J. McBean & Co	Cedar blocks	1,512.49	358.22
Nov. 29, 1888	McAdam & Amberg	C. F. Cedar blocks	11,601.99	2,747.84
........1888	McAdam & Amberg	C. F. Cedar blocks	5,048.43	1,262.11
June 7, 1888	Western Pav. & Supply Co.	G. F. Cedar blocks	2,691.34	1,053.14
June 16, 1888	R. F. Conway	G. Cedar blocks	1,650.99	391.02
July 27, 1888	McAdam & Amberg	G. Cedar blocks	3,454.52	808.00
Aug. 13, 1888	McAdam & Amberg	C. F. Cedar blocks	2,110.02	633.00
Aug. 30, 1888	J. B. Smith & Co.	C. G. Cedar blocks.	1,833.42	485 31
Nov. 1, 1888	J. B. Smith & Co.	C. G. Cedar blocks.	4,572.85	1,210.46
Dec. 13, 1888	R. F. Conway	C. Wall, F. Cedar blocks	30,387.60	5,843.17
Dec. 15, 1888	R. F. Conway	C. F. Cedar blocks	4,546.42	1,170.60
June 26, 1888	A. J. McBean & Co.	G. Cedar blocks	8,861.14	2,476.72
June 26, 1888	A. J. McBean & Co.	G. Cedar blocks	3,217.85	899.40
July 16, 1888	J. B. Smith & Co.	G. Cedar blocks	1,773.23	416.25
July 30, 1888	Jas. Conlan	F. Granite blocks	7,337.76	1,367.28
Aug. 28, 1888	J. B. Smith & Co.	C. F. Cedar blocks	2,332.88	552.52
Oct. 4, 1888	McAdam & Amberg	C. G. Cedar blocks	4,946.17	1,171.46
Oct. 22, 1888	R. F. Conway	C. F. Cedar blocks	2,498.15	591.67
Oct. 13, 1888	J. B. Smith & Co.	G. Cedar blocks	1,932.15	356.34
Nov. 6, 1888	Olaf Vider	C. and G	....	600.30
Oct. 29, 1888	A. J. McBean & Co.	G. Cedar blocks	4,678.14	859.25
Nov. 28, 1888	Wm. Kinsella	C. F. Cedar blocks	965.32	361.88
Nov. 28, 1888	Wm. Kinsella	C. F. Cedar blocks	2,066.63	619.90
Dec. 17, 1888	Western Pav. & Supply Co.	C. F. Cedar blocks	12,286.00	2,909.84
June 19, 1888	McAdam & Amberg	C. F. Cedar blocks	13,450.86	3,560.52
July 9, 1888	J. B. Smith & Co.	G. Cedar blocks	14,542.97	2,698.70
Aug. 1, 1888	W. F. Hair.	C. and filling	....	959.70
June 8, 1888	A. J. McBean & Co.	C. F. Cedar blocks	1,474.21	457.51

STREETS IMPROVED, WEST

NAME OF STREET.	FROM	TO	COMMENCED.
Fry	Center avenue	Noble	April 10, 1888
Fourteenth	Ashland avenue	Wood	Aug. 2, 1888
Frank	Waller	Blue Island avenue	Sept. 3, 1888
Frank	Waller	Blue Island avenue	June 11, 1888
Flournoy	Campbell avenue	Rockwell	Aug. 1, 1888
Flournoy	Western avenue	Campbell avenue	Aug. 1, 1888
Fifteenth	Canal	Halsted	June 4, 1888
Fifteenth	Center avenue	Ashland avenue	Nov. 3, 1888
Fifteenth	Canal	Halsted	Oct. 19, 1888
Fifteenth	Ashland avenue	Wood	Nov. 26, 1888
Fifteenth	Ashland avenue	Center avenue	June 21, 1888
Fifteenth	Ashland avenue	Wood	July 2, 1888
Green	Van Buren	Harrison	May 21, 1888
Gilpin place	Sibley	Loomis	June 17, 1888
Gurley	Blue Island avenue	May	Aug. 25, 1888
Gross terrace	Madison	Colorado avenue	July 3, 1888
George	Elston avenue	Carpenter	Sept. 1, 1888
Halsted	Twenty-second	South branch river	July 10, 1888
Henry	Blue Island avenue.	Ashland avenue	June 22, 1888
Hunt	Center avenue	Elizabeth	Aug. 9, 1888
Henry	Morgan	Blue Island avenue	June 1, 1888
Hermitage avenue	Polk	Twelfth	June 3, 1888
Halsted	Indiana	Chicago ave. viaduct	Nov. 5, 1888
Hinman	Blue Island avenue	Robey	....
Hastings	Ashland avenue	Wood	....
Irving avenue	Monroe	Adams	June 5, 1888
Irving avenue	Van Buren	Harrison	June 4, 1888
Irving avenue	Polk	Taylor	May 3, 1888
Jackson	Halsted	Hoyne avenue	July 7, 1888
Jackson	Halsted	Hoyne avenue	July 7, 1888
Kedzie avenue	Twenty-sixth	West branch South branch riv.	April 9, 1888
Kinzie	Canal	Jefferson	May 7, 1888
Kendall	Polk	Taylor	....
Lexington	Western avenue	Campbell avenue	April 30. 1888
Lake	Western avenue	Rockwell	June 13, 1888
Lake	Rockwell	Homan avenue	Oct. 7, 1887
Leavitt	Lake	Chicago avenue	June 15, 1888
Laflin	Twelfth	Fourteenth	Aug. 27, 1888
Laflin	Twelfth	Fourteenth	June 3, 1888
Lexington	Campbell avenue	Rockwell	June 18, 1888

DIVISION, 1888—CONTINUED.

FINISHED.	CONTRACTOR.	NATURE OF IMPROVEMENT.	SQUARE YARDS.	LINEAL FEET.
June 26, 1888	J. B. Smith & Co.	C. F. Cedar blocks	5,501.64	1,303.02
Aug. 14, 1888	A. J. McBean & Co	G. Cedar blocks	5,558.42	1,309.58
Oct. 1, 1888	A. J. McBean & Co	G. Cedar blocks	4,046.22	1,011.55
Oct. 4, 1888	Olaf Vider	C. Wall and filling	....	....
Oct. 6, 1888	Western Paving & Supply Co	C. G. Cedar blocks	2,145.10	637.53
Oct. 6, 1888	M. J. La Bounty	C. F. Cedar blocks	2,093.38	596.80
Oct. 29, 1888	W. F. Hair	Curbing and filling	....	....
Nov. 20, 1888	A. J. McBean & Co	G. Cedar blocks	9,454.79	2,171.50
Nov. 27, 1888	Western Paving & Supply Co	G. Cedar blocks	4,210.59	1,695.90
Dec. 20, 1888	A. J. McBean & Co	G. Cedar blocks	5,553.00	1,280.13
Dec. 6, 1888	R. F. Conway	Curb and filling	....	....
Dec. 8, 1888	R. F. Conway	Curb and filling	....	....
June 12, 1888	A. J. McBean & Co	G. Cedar blocks	2,921.77	692.00
July 5, 1888	McAdam & Amberg	G. Cedar blocks	1,343.77	390.13
Sept. 7, 1888	R. F. Conway	G. Cedar blocks	7,150.87	1,787.72
Aug. 5, 1888	McAdam & Amberg	C. F. Cedar blocks	1,578.08	507.24
Oct. 10, 1888	McAdam & Amberg	C. Cedar blocks	2,444.89	579.05
July 20, 1888	M. C. & J. Duffy	G. Cedar blocks	2,844.51	1,127.78
July 19, 1888	A. J. McBean & Co	C. F. Cedar blocks	10,067.50	2,384.41
Sept. 6, 1888	A. J. McBean & Co	C. G. Cedar blocks	1,502.46	520.08
Aug. 14, 1888	W. F. Hair	G. Cedar blocks	6,195.75	1,467.41
Sept. 8, 1888	J. B. Smith & Co	C. F. Cedar blocks	5,265.09	1,579.53
Nov. 27, 1888	J. B. Smith & Co	C. F. Cedar blocks	4,669.22	1,867.69
Dec., 1888	Jas. Kincade	C. Wall and filling.	....	2,775.00
....	....	C. and filling	....	1,200.00
June 25, 1888	M. J. La Bounty	F. Cedar blocks.	1,386.83	416.05
Aug. 15, 1888	McAdam & Amberg	C. F. Cedar blocks	2,580.59	774.17
Oct. 10, 1888	J. B. Smith & Co	C. F. Cedar blocks	2,694.00	808.20
Dec. 6, 1888	R. F. Wilson	G. Macadam	37,747.25	8,940.14
Dec. 6, 1888	R. F. Wilson	G. Granite blocks	542.98	128.60
May 9, 1888	Dolese & Shepard	Macadam 16 ft. wide.	5,591.11	3,145.00
June 9, 1888	R. F. Conway	G. Granite blocks	2,137.61	419.00
....	Western Paving & Supply Co	C. F. Cedar blocks	3,812.76	1,143.83
July 9, 1888	R. F. Conway	C. F. Cedar blocks	2,084.05	625.21
July 23, 1888	J. B. Smith & Co	C. G. Cedar	4,953.51	1,393.17
Aug. 14, 1888	R. F. Conway	C. F. Cedar blocks	19,413.32	5,459.99
Aug. 20, 1888	A. J. McBean & Co.	C. Cedar blocks	13,322.82	3,845.93
Aug. 31, 1888	R. F. Conway	G. Cedar blocks	4,672.12	1,106.55
Aug. 31, 1888	Wm. Kinsella	Curb and filling	....	....
Sept. 3, 1888	J. B. Smith & Co	C. F. Cedar blocks	1,993.41	598.02

STREETS IMPROVED, WEST

NAME OF STREET.	FROM	TO	COMMENCED.
Law avenue	Harrison	Polk	Aug. 20, 1888
Lytle	Taylor.	Gilpin place	Oct. 1, 1888
Lytle	Taylor	Gilpin place	June 14, 1888
Lee place	Robey	Hoyne avenue	Aug. 20, 1888
Loomis	Fourteenth	Blue Island avenue	....
Loomis	Eighteenth	Twenty-first	July 23, 1888
Margaret	Fourteenth	Fifteenth	Oct. 7, 1887
Morgan	Kinzie	Indiana	April 13, 1888
Monroe	Robey	Oakley avenue	June 12, 1888
Miller	Harrison	Gurley	Aug. 21, 1888
Miller	Gurley	Polk	Aug. 21, 1888
Morgan	Fourteenth	Wright	Aug. 18, 1888
Margaret	Fourteenth	Fifteenth	Sept. 1, 1888
Morgan	Fourteenth	Wright	June 3, 1888
McReynolds	Wood	Paulina	Aug. 25, 1888
Marshfield avenue	Polk	Twelfth	June 2, 1888
Marion place	Division	Ellen	Oct. 1, 1888
Newberry avenue	Fourteenth	Wright	May 10, 1888
Ohio	Milwaukee avenue	Ashland avenue	....
Oakley avenue	Kinzie	Indiana	June 20, 1888
Ohio	Lincoln	Ashland avenue	Aug. 4, 1888
Ogden place	Ashland boulevard	Paulina	Oct. 18, 1888
Pratt place	Hoyne avenue	Western terminus	Nov. 17, 1887
Park avenue	Leavitt	Western avenue	June 7, 1888
Plum	Loomis	Laflin	May 28, 1888
Plum	Loomis	Laflin	Aug. 3, 1888
Park avenue	Lincoln	Wood	Aug. 9, 1888
Pratt	Morgan	Sangamon	Aug. 22, 1888
Paulina	Twelfth	Fifteenth	Oct. 25, 1888
Polk	Western avenue	Campbell avenue	Oct. 17, 1888
Polk	Ellsworth avenue	Viaduct	....
Rumsey	Chicago avenue	Division	June 1, 1888
Rumsey	Chicago avenue	Division	Oct. 9, 1888
Rose.	Chicago avenue	Cornell	Oct. 9, 1888
Seymour	Lake	Railroad grounds s. of Kinzie	Sept. 1, 1887
Shober	North avenue	Wabansia avenue	Aug. 6, 1888
Sebor	Desplaines	Halsted	Sept. 3, 1888
Snell	Chicago avenue	Huron	Aug. 20, 1888
Sibley	Gilpin place	McAllister place	Sept. 3, 1888
Staunton	Madison	Lake	Aug. 7, 1888

DIVISION, 1888—CONTINUED.

FINISHED.	CONTRACTOR.	NATURE OF IMPROVEMENT.	SQUARE YARDS.	LINEAL FEET.
Sept. 12, 1888	J. B. Smith & Co.	G. Cedar blocks	2,600.57	796.09
Oct. 13, 1888	A. J. McBean & Co.	G. Cedar blocks	2,523.29	688.17
Oct. 20, 1888	Olaf Vider	Curbing and filling	....	....
Nov. 30, 1888	J. B. Smith & Co	C. G. Cedar blocks.	1,619.14	604.76
....	Wm. Kinsella	Curbing and filling	....	1,414.18
Dec. 6, 1888	A. J. McBean & Co.	C. F. Cedar blocks	4,407.67	1,019.33
April 7, 1888	Jas Kinsella	Curbing and filling	....	....
June 9, 1888	J. B. Smith & Co	C. F. Cedar blocks.	2,933.39	694 75
July 13, 1888	J. B. Smith & Co	C. G. Cedar blocks.	8,016.67	1,913.79
Sept. 5, 1888	A. J. McBean & Co	G. Cedar blocks	1,634.00	408.50
Sept. 5, 1888	A. J. McBean & Co	G. Cedar blocks	1,501.36	375 34
Sept. 13, 1888	J. B. Smith & Co	G. Cedar blocks	1,704.06	376.81
Sept. 15, 1888	R. F. Conway	G. Cedar blocks	2,204.77	548.15
Sept. 26, 1888	Olaf Vider	Curbing and filling	....	....
Nov. 8, 1888	Western Pav. & Supply Co.	C .F. Cedar blocks	2,470.28	617.57
Nov. 27, 1888	McAdam & Amberg	C. F. Cedar blocks	5,313.47	1,594.04
Nov. 17, 1888	J. B. Smith & Co	C. Cedar blocks	2,617.88	785.36
May 21, 1888	Olaf Vider	G. Cedar blocks	1,678.42	396.48
June 26, 1888	A. J. McBean & Co	C. F. Cedar blocks	15,738.89	3,077.00
Aug. 13, 1888	Western Pav. & Supply Co.	C. G. Cedar blocks	3,087.20	731.18
Sept. 12, 1888	A. J. McBean & Co.	C. G. Cedar blocks.	7,804.04	1,848.32
Nov. 30, 1888	Western Pav. & Supply Co.	C. Cedar blocks	2,251.25	533.19
June 10, 1888	J. B. Smith & Co	C. F. Cedar blocks.	2,006.44	475.21
July 5, 1888	A. J. McBean & Co	G. Cedar blocks	5,499.91	1.302.61
June 26, 1888	McAdam & Amberg	Curbing and filling	....	....
Aug. 25, 1888	J. B. Smith & Co	G. Cedar blocks	2,532.76	599.87
Aug. 30, 1888	Western Pav. & Supply Co.	C. G. Cedar blocks.	1,342.63	402.88
Oct. 1, 1888	J. B. Smith & Co	C. F. Cedar blocks.	1,474.27	354.85
Nov. 5, 1888	McAdam & Amberg	G. Cedar blocks	8,043.36	1,900.00
Nov. 30, 1888	McAdam & Amberg	C. F. Cedar blocks.	2,352.43	769.25
....	J. B. Smith & Co	G. and Cedar blocks	529.55	354.00
Nov. 10, 1888	Olaf Vider	Curbing and filling	....	....
Nov. 8, 1888	J. B. Smith & Co	Cedar blocks	10,397.46	2,599.36
Nov. 30, 1888	La Bounty & Netterstrom	C. F. Cedar blocks.	1,314.91	622.85
June 25, 1888	R. F. Conway	C. F. Cedar blocks.	4,605.33	1,090.73
Sept. 10, 1888	Western Pav. & Supply Co.	C. F. Cedar blocks.	2,612.77	619.00
Sept. 12, 1888	R. F. Conway	G. Cedar blocks	3,318.10	829.53
Oct. 1, 1888	J. B. Smith & Co	C. F. Cedar blocks.	2,004.44	601.00
Oct. 12, 1888	La Bounty & Netterstrom	G. Cedar blocks	1,255.44	284.08
Nov. 7, 1888	Western Pav. & Supply Co.	C. Cedar blocks	3,827.77	1,148.33

STREETS IMPROVED, WEST

NAME OF STREET.	FROM	TO	COMMENCED.
Samuel	Chicago avenue	Division	Sept. 27, 1888
Superior	Noble	Wood	Sept. 12, 1888
Seward	Eighteenth	Sixteenth	Private
Twenty sixth	California avenue	Kedzie avenue	Feb. 1, 1888
Taylor	Ashland boulevard	Ogden avenue	Sept. 24, 1887
Thirteenth place	Blue Island avenue	Ashland avenue	June 11, 1888
Twenty first	Blue Island avenue	Center avenue	Sept. 27, 1888
Twenty-second	Ashland avenue	Western avenue	July 16, 1888
Thirteenth	Ashland avenue	Wood	Aug. 2, 1888
Temple	Huron	Chicago avenue	July 9, 1888
Thirteenth place	Blue Island avenue	Waller	....
Twentieth	Blue Island avenue	Ashland avenue	July 22, 1888
Thirteenth place	Blue Island avenue	Waller	July 22, 1888
Twenty second	Blue Island avenue.	Western avenue	 1887
Thirteenth place	Ashland avenue	Wood	June 10, 1888
Thirteenth	Waller	Blue Island avenue	Nov. 17, 1888
Twelfth	Ashland boulevard	Ogden avenue	June 14, 1888
Twelfth	Ogden avenue	California avenue	....
Thirteenth	Waller	Blue Island avenue	July 27, 1888
Thirteenth	Wood	Ogden avenue	....
Wilcox avenue	Chi. & N.-W. Ry.	Sacramento avenue	April 25, 1888
Wilcox avenue	Rockwell	Sacramento avenue	June 3, 1888
Waller	Twelfth	Fourteenth	Aug. 13, 1888
Winthrop place	Polk	Taylor	Aug. 9, 1888
Wright	Halsted	Western terminus	Aug. 13, 1888
Wright	Halsted	Western terminus	June 3, 1888
Wade	Crittenden	Elston avenue	Aug. 27, 1888
Wood	Twelfth	Fifteenth	....
Western avenue	Ogden avenue	Twenty second	....
Western avenue	Twenty second	Twenty-sixth	....
York	Laflin	Ashland boulevard	May 14, 1887

DIVISION, 1888—CONTINUED.

FINISHED.	CONTRACTOR.	NATURE OF IMPROVEMENT.	SQUARE YARDS.	LINEAL FEET.
Nov. 12, 1888	La Bounty & Netterstrom	C. G. Cedar blocks.	10,459.91	2,614.95
Nov. 30, 1888	J. B. Smith & Co	C. G. Cedar blocks.	10,279.32	2,434.58
Contract	Dolese & Shepard	C. G. Granite blocks	2,020.79	512.
May 9, 1888	Dolese & Shepard	Macadam, 16 ft. wide	4,693.33	2,640.
June 8, 1888	McAdam & Amberg	C. F. Cedar blocks.	6,565.39	1,644.09
July 3, 1888	J. B. Smith & Co	G. Cedar blocks	13,188.98	3,110.26
July 10, 1888	R. F. Conway	C. G. Cedar blocks.	5,558.23	2,273.82
Aug. 20, 1888	R. F. Conway	G. Cedar blocks	23,208.58	5,496.77
Aug. 29, 1888	A. J. McBean & Co	G. Cedar blocks	5,578.63	1,321.25
Aug. 25, 1888	Western Pav. & Sup. Co	C. F. Cedar blocks	2,004.44	601.33
Sept. 19, 1888	R. F. Conway	G. Cedar blocks	2,154.87	510.36
Sept. 27, 1888	A. J. McBean & Co	C. W. F. Cedar blocks	2,700.18	639.52
Sept. 27, 1888	Olaf Vider	Curb and filling	....	....
June 23, 1888	Jas. Kincade	C. Wall and filling	....	....
Nov. 20, 1888	Jas. Kincade	C. and filling	....	1,201.80
Nov. 30, 1888	R. F. Conway	G. Cedar blocks	2,975.35	685.07
Dec. 6, 1888	R. F. Wilson	Curb and filling	....	4,683.20
....	McAdam & Amberg	Curb and filling	....	500.
Nov. 27, 1888	Olaf Vider	Curb and filling	....	....
....	R. F. Wilson	Curb wall and filling	....	4,805.
Aug., 1888	R. F. Conway	Curb and filling	....	....
July 28, 1888	A. J. McBean & Co	G. Cedar blocks	8,950.50	2,685.15
Aug. 28, 1888	R. F. Conway	C. G. Cedar blocks	5,382.49	1,271.45
Sept. 3, 1888	A. J. McBean & Co	G. Cedar blocks	3,419.46	809.87
Sept. 15, 1888	R. F. Conway	G. Cedar blocks	5,649.84	1,336.95
Oct. 4, 1888	Olaf Vider	Curb and filling	....	....
Oct. 15, 1888	A. J. McBean & Co	C. Cedar blocks	5,889.	1,394.76
....	R. F. Conway	Curb and filling	....	1,477.90
....	McAdam & Amberg	Curb wall and filling	....	1,300.
....	McAdam & Amberg	Curb wall and filling	....	2,557.
May 22, 1888	A. J. McBean & Co	G. Cedar blocks	2,428.11	573.57
	Totals	....	596,688.97	185,591.33

Lineal feet paving .... 157,117.25 feet or 29.76 miles.

On unpaved streets, lineal feet curbing...... 28,474.08 feet or 5.39 miles.

Grand total .... 185,591.33 feet or 35.15 miles.

SUMMARY OF STREETS IMPROVED, 1888.

PAVEMENT.	NORTH DIVISION.		SOUTH DIVISION.		WEST DIVISION.		VIADUCTS AND APPROACHES.		TOTAL.	
	Square Yards.	Miles.	Square Yards.	Miles.	Square Yards.	Miles.	Square Yards.	Miles.	Square Yards.	Miles.
Cedar blocks on 2-inch Hemlock Plank	190,301.63	10.62	141,291.17	7.73	536,618.14	26.04	21,120.46	1.15	889,331.40	45.54
Cedar blocks on macadam foundation	23,554.71	1.46	2,060.56	0.15					25,615.27	1.61
Granite blocks			55,223.19	2.58	12,039.14	0.46			67,262.33	3.04
Macadam			18,960.86	0.88	48,031.69	2.79			66,992.55	3.67
Oak plank 3-inch, Roadway 16 feet						0.47				0.47
Totals	213,856.34	12.08	217,535.78	11.34	596,688.97	29.76	21,120.46	1.15	1,049,201.55	54.33
Curbing and filling on unpaved streets		0.63		2.14		5.39				8.16

The following table shows the kind of paving in each division of the city at the close of the year 1888:

DIVISIONS.	Wooden Blocks.	Macadam.	Medina Stone.	Granite Blocks.	Sheet Asphalt.	Asphalt Blocks.	Gravel.	Cinders.	Oak Plank.	Grand Total Miles.
North........	59.97	1.19	.49	.04	2.19	.....	.42	1.26	....	65.56
South.......	66.10	10.03	4.15	12.34	.33	4.11	4.38	.36	....	101 80
West	156.80	22.57	.39	.69	.82	......	2.64	8.29	.47	192.67
Viaduct and Approaches ..	1.15	.....	.....	......	......	......	.....	.....	....	1.15
Total......	284.02	33 79	5.03	13.07	3.34	4.11	7.44	9.91	.47	361.18
Less repairing done in 1888.	8.21	1.99	2.45	......	......	......	.....	.....	....	12.65
Total Miles.	275.81	31.80	2.58	13.07	3.34	4.11	7.44	9.91	.47	348.53

LUMBER.

The following table shows in detail the amount of lumber used by the division foremen in the repairs and construction of aprons, culverts, crossings, sidewalk intersections and repairs, to which is added the amount of lumber used in the construction of sidewalks for which special assessments were levied:

For What Used.	North Division.			South Division.			West Division.		
		Lumber.			Lumber.			Lumber.	
	No.	No. Feet Pine.	No. Feet Oak.	No.	No. Feet Pine.	No. Feet Oak.	No.	No. Feet Pine.	No. ft. Oak
Aprons	499	26,711	....	1,084	55,195	....	1,585	197,014	...
Crossings	124	19,212	....	249	46,848	53	1,352	215,485	...
Culverts	6	1,168	....	98	28,599	.....	644	219,921	...
Drain boxes	16	2,700	....	92	10,226	.....	66	13,519	...
Steps and railings	95	4,016	....	156	16,500	....	113	12,248	...
Sidewalk general repairs	...	55,246	....	...	160,010	...	....	265,800	...
Sidewalk intersections	69	111,184	....	1,116	229,542	.....	1,516	541,800	...
General repairs	...	9,129	....	...	39,295	36,853	....	27,525	...
Totals	...	229,316	....	....	586,215	36,906	....	1,493,312	...

RECAPITULATION.

Total amount of pine lumber	2,308,843 feet.
Total amount of oak lumber	36,906 feet.
To which is added the amount of lumber used in constructing sidewalks under special assessment	1,573,225 feet.
Grand total	3,918,974 feet.

REPAVING.

The amount of repaving done by the division foremen in the work of repairing improved streets, the replacing of pavement where openings were made by gas companies, water and sewerage departments etc., and on account of street permits and general repairs, is given in the following; also the amount of repaving done by contractors for gas companies etc., the work having been done under this department's supervision and the expense of same paid by the companies interested:

FOR WHAT PURPOSE.	NORTH DIV.	SOUTH DIV.	WEST DIV.	TOTAL.
	Square Yds.	Square Yds.	Square Yds.	Square Yds.
General Repairs	6,748	17,853	25,159	49,260
Gas Companies	170	926	4,444	5,540
Water Department	622	756	2,334	3,712
Sewer Department	167	403	946	1,516
Fire Department	90	20	515	625
Engineer's Department	100	90	24	214
Street Permits	3,296	3,331	13,157	19,784
Totals	11,193	22,879	46,579	80,651

Total number of square yards	80,651
To which is added the amount of repaving done by contractors for Gas Companies etc	16,634
Grand total square yards	97,285

UNIMPROVED STREETS.

In the work of grading and ditching, the money at the disposal of this department for that purpose has been judiciously expended in keeping unimproved streets in good, passable condition.

The total length of streets graded and ditched by the division foremen amounts in the aggregate to about 291 miles, an increase of over fourteen per cent. over last year.

The following streets were planked, all of the material used being furnished by property owners in the localities mentioned:

Paulina, between Blue Island avenue and river	2,000 feet
Ullman, between Thirty-fifth and Thirty-eighth	1,500 feet
Thirty-eighth court from Halsted to Laurel	1,280 feet
Harrison, from Clark to Rock Island R'y tracks	400 feet
Polk, from Clark to Pacific avenue	215 feet
Polk, from Sherman to Fifth avenue	215 feet
Sherman, from Polk to Harrison	800 feet
Throop, from Twenty-second to South branch river	1,680 feet
Alley west of Blue Island avenue between Gurley and Harrison	470 feet
Canal, between Eighteenth and Twenty-second street bridge	3,000 feet
Total	11,560 feet

IMPROVED STREETS.

STREET SWEEPING AND CLEANING.

Previous to this year the work of street cleaning has been done entirely by contract. Under your instructions this method was changed by placing the First Ward in a district to be cleaned by this department; all improved streets outside of said district to be let on contract to the lowest bidder to sweep those streets with machinery, and collect and remove all sweepings.

The streets were scheduled for cleaning as follows:

CLASS A—107,445 lineal feet or 20.35 lineal miles.
CLASS B— 63,028 lineal feet or 11.93 lineal miles.
CLASS C—254,393 lineal feet or 48.18 lineal miles.
CLASS D—275,398 lineal feet or 52.16 lineal miles.
CLASS E—579,160 lineal feet or 109.69 lineal miles.
CLASS A—Comprises the streets in the First Ward only.
CLASS B—Streets cleaned twice each week.
CLASS C—Streets cleaned once each week.
CLASS D—Streets cleaned twice each month.
CLASS E—Streets cleaned once each month or as often as required.
CLASS F—Alleys cleaned once each month, with the exception of those in the First Ward which were cleaned more frequently.

The contract for sweeping with machinery the improved streets in the First Ward, was awarded to John S. Cooper, at $7 per lineal mile.

The contract for sweeping and cleaning all improved streets outside of the First Ward, was also awarded to John S. Cooper, the contract price per lineal mile being $23.99.

The work of cleaning was commenced on April 2, 1888, and closed December 31, 1888.

Total cost of the work under contracts	$88,168.41
Cost of cleaning done by the Department	56,392.09
Total amount expended during the year for street cleaning	$144,560.50

The following tables show in detail the amount, character and cost of the work of cleaning improved streets during the year 1888:

STATEMENT OF WORK DONE BY THE CONTRACTOR IN CLEANING STREETS OUTSIDE OF THE FIRST WARD.

1888.	CLASS B.			CLASS C.			CLASS D.			CLASS E.			CLASS F. (ALLEYS.)			TOTALS.		
	Cleaned twice each Week.			Cleaned once each Week.			Cleaned twice each Month.			Cleaned once each Month.			Cleaned once each Mo.					
MONTHS.	Lineal Feet.	Lineal Miles.	Cost at Contract Price.	Lineal Feet.	Lineal Miles.	Cost at Contract Price.	Lineal Feet.	Lineal Miles.	Cost at Contract Price.	Lineal Feet.	Lineal Miles.	Cost at Contract Price.	Lineal Feet.	Lineal Miles.	Cost at Contract Price.	Lineal Feet.	Lineal Miles.	Cost at Contract Price.
April............	151,253	28.65	$ 687 31	409,739	77.60	$1,861 63	326,060	61.75	$1,481 38	483,917	91.65	$2,198 68	8,634	1.64	$ 39 35	1,379,603	261.29	$6,268 35
May............	282,315	53 47	1,282 75	777 515	147.26	3,532 76	445,935	84.45	2,025 96	474,799	89.93	2,157 42	26,699	5.05	121 15	2,007,263	380.16	9,120 04
June............	512,492	97.07	2,328 70	905,058	171.41	4,112 13	535,489	101.42	2,433 07	599,948	113.62	2,725 75	29,244	5.54	132 90	2,582,211	489.06	11,782 55
July............	454,834	86.14	2,066 50	926,512	175.48	4,209 76	502 847	95.23	2,284 57	559,983	106.06	2,544 38	30,122	5.71	136 98	2,474,298	468.62	11,242 19
August..........	442,661	83.84	2,011 32	913,280	172.97	4,149 55	503,900	95 43	2,289 37	563,191	106.67	2,559 02	19,409	3.68	88 27	2,442,441	462.58	11,097 29
September........	376,938	71.39	1,712 65	831,177	157.42	3,776 50	407,636	77.20	1,852 03	523,654	99.18	2,379 33	23,456	4.44	106 51	2,162,861	409.63	9,827 02
October.........	425,036	80.50	1,931 20	705,246	133.57	3,204 35	459,511	87.03	2,087 84	604,613	114.51	2,747 09	11,400	2.16	51 82	2,205,806	417.77	10,022 30
November.... ...	153,618	29.09	697 87	280,845	53.19	1,276 03	185,091	35.06	841 09	232,612	44.06	1,057 00	4,390	.83	19 91	856,556	162.23	3,891 90
Grand totals......	2,799,147	530.15	$12,718 30	5,749,372	1088.90	$26,122 71	3,366,469	637.57	$15,295 31	4,042,717	765.68	$18,368 67	153,334	29.05	$696 89	16,111,039	3051.34	$73,201 64

Work closed in Classes B, C, D, E and F, November 17, 1888.

Average number of lineal miles cleaned each month...... 381.42
Average cost for each month $9,150.21

THE FOLLOWING TABLE SHOWS THE FORCE EMPLOYED AND THE AMOUNT OF SWEEPINGS REMOVED BY THE CONTRACTOR DURING THE YEAR.

MONTHS, 1888.	FORCE EMPLOYED BY CONTRACTOR ON STREET CLEANING.							Amount of sweepings removed by contractor.	
	Average number foremen employed daily.	Average number laborers employed daily.	Average number carts employed daily.	Average number teams employed daily.	Average number four-horse sweeping machines employed daily.	Average number two-horse sweeping machines employed daily.	Average number sprinkling wagons employed daily.	Average number cubic yards removed daily.	Total number cubic yards removed monthly.
April	20	375	30	118	5	2	3	1,750	40,245
May	9	103	38	....	5	2	3	669	18,063
June	8	85	31	....	5	2	3	604	15,102
July	8	75	28	....	5	2	3	463	10,060
August	8	77	26	....	5	2	3	393	9,433
September	8	78	28	....	5	2	3	369	7,487
October	8	79	29	....	5	2	3	411	10,686
November	8	87	31	....	5	2	3	451	4,966
Totals and averages	9	120	30	118	5	2	3	639	116,042

Work closed in Classes B, C, D, E and F, Nov. 17, 1888.

Average number cubic yards removed each month, 14,505.

The district scheduled as Class A, is composed of streets in the First Ward which were swept with four-horse machines, under contract with John S. Cooper, at $7.00 per lineal mile. The work of collection and removal of sweepings was performed by laborers at $1.50 per day, and carts at $3.00 per day.

One item in this connection should not be overlooked; the Baltimore & Ohio Railroad Company received all the sweepings from this district, an average of four car-loads daily, and removed the same beyond the limits of the city, without charge.

The following table shows sweeping done with machinery, by the contractor, for Class A during the year:

MONTHS, 1886.	SWEEPING DONE.		COST AT CONTRACT PRICE.
	LINEAL FEET.	LINEAL MILES.	
April	901,689	170.77	$1,195 39
May	1,416,769	268.33	1,878 31
June	1,805,823	342.02	2,394 14
July	1,242,784	235.36	1,647 52
August	1,245,579	235.91	1,651 37
September	1,200,006	227.28	1,590 96
October	1,397,846	264.74	1,853 18
November	1,189,535	225.29	1,577 03
December	893,850	168.41	1,178 87
TOTALS	11,293,731	2,138.11	$14,966.77

Contract for sweeping Class A closed December 31, 1888.

Average number of lineal miles swept each month	237 57
Average cost for sweeping each month	$1,662 97

The work of street cleaning in the First Ward, as performed by the department during the year, has been more thorough than that of any previous year, and the average cost, per lineal mile, much less as the following table shows.

This district was divided into two parts; that portion from and including Twelfth street north to Van Buren street was cleaned twice each week; that from and including Van Buren street north was cleaned four times each week.

The sweeping was done at night, and the work of collection and removal commenced at 5 A. M. until September 18, when the carts and broomers were sent to work at 10 P. M., immediately following the sweeping machines, finishing on or before 7 A. M.

MONTHS, 1888.	NUMBER OF LINEAL MILES CLEANED BY THE DEPARTMENT.							COST.	
	Streets.	Streets (not included in Class A).	Alleys.	Bridges.	Viaducts.	Inter-sections.	Total Lineal Miles.	Total Cost.	Average Cost for Each Lineal Mile.
April	265.80		5.60				271.40	$8,643 90	$31 85
May	291.17		5.75				296.92	6,125 35	20 63
June	357.16		14.86	.75			372.77	7,624 12	20 45
July	268.62		13.46	1.42			283.50	5,634 91	19 88
August	285.02		14.94	2.10	7.19		309.25	5,713 29	18 47
September	280.70		17.39	2.03	6.85		306.97	5,677 45	18 50
October	270.43		9.39	2.77	7.10		289.69	6,216 01	21 47
November	211.64	11.60	9.26	1.42	2.57	7.12	243.61	6,064 44	24 90
December	181.37	10.93	7.83	1.61	.67	32.24	234.65	4,718 99	20 11
Totals	2,411.91	22.53	98.48	12.10	24.38	39.36	2,608.76	$56,418 46	$21 63

Average number of lineal miles swept and cleaned each month, 289 86

Average cost for sweeping and cleaning each month............$6,268 72

The number of cubic yards of sweepings removed from South Water street, the force employed, and the amount of sweepings, in cubic yards, removed by the department on all work done in the First Ward during the year, is as follows :

MONTHS, 1888.	FORCE EMPLOYED BY THE DEPARTMENT.				AMOUNT OF SWEEPINGS REMOVED BY THE DEPARTMENT.			
							Removal of Sweepings from South Water Street Exclusively.	
	Average Number Carts Daily	Average Number Laborers Daily.	Average Number Foremen Daily.	Average Number Assistant Foremen Daily.	Average Number Cubic Yards Daily.	Total Number Cubic Yards Monthly.	Average Number Cubic Yards Daily.	Total Number Cubic Yards Monthly.
April	39	90	2	2	543	10,881	18	234
May	19	77	2	2	166	5,001	17	292
June	33	90	2	2	213	5,763	12	230
July.	24	67	2	2	178	4,464	13	208
August	18	65	2	2	181	4,731	10	187
September...	18	63	2	2	210	5,445	12	220
October......	18	64	2	2	207	5,815	13	223
November....	20	70	2	2	235	6,121	10	152
December....	18	70	2	2	217	5,434	13	195
Totals, averages etc.	23	73	2	2	239	53,655	24	1,941

Average number of cubic yards removed each month 5,962

Average number of cubic yards removed each month from South Water street exclusively, 216

REMOVAL OF SNOW, ICE ETC.

During the months of January, February and March, all the street intersections within the First Ward north from Van Buren street, inclusive, were swept and cleaned by the department daily, removing snow, ice and dirt therefrom.

Also sweeping and cleaning all bridges, viaducts and approaches thereto, also opening gutters and inlets to catch-basins within the same district.

Total number of intersections cleaned	94
Total number of bridges cleaned	9
Total number of viaducts cleaned	8

During the month of March, in addition to the above, seventy-five lineal miles of streets and four lineal miles of alleys were cleaned from curb to curb, in the three divisions of the city. These included principally main streets adjoining and extending from the central part of the city.

Total cost for the month of January	$5,051 45
Total cost for the month of February	5,282 30
Total cost for the month of March	4,606 65
Total cost for three months	$14,940 40

In addition to the foregoing, 129.27 miles of macadam paved streets were scraped and cleaned by district foremen of the department.

RECAPITULATION OF ALL STREET CLEANING ETC., FOR 1888.

STREET CLEANING.	Total Number Lineal Miles.	Average Number Lineal Miles per Month.	Total Cost.	Average Cost per Lineal Mile.
Under contract, Classes B, C, D, E and F, as per schedule..........	3,051.34	381.42	$73,201 64	$23 99
By the department, Class A, as per schedule......................	2,608.76	289.86	*56,418 46	21 63
By the department, cleaning done during month of March, and removal of snow, ice etc., during January, February and March....	79.00	....	14,940 40	......
TOTALS..................	5,739.10	671.28	$144,560 50	

*This amount includes the cost of sweeping ($7.00 per lineal mile) by the contractor.

PERMITS FOR OPENING STREETS.

Fifteen hundred and fifty-two (1,552) permits were issued to sundry persons to open improved streets. A cash deposit, covering cost of replacing pavements etc., to their original condition, was made on each permit.

Openings made on improved streets by gas companies and sundry other corporations under general deposit, where the work of replacing pavements was done by contractors, subject to inspection and acceptance of the department, are not included herein.

A comparative statement and summary is given herewith:

MONTH.	Number of Permits Issued in 1887.	Number of Permits Issued in 1888.	MONTH.	Number of Permits Issued in 1887.	Number of Permits Issued in 1888.
January	25	58	August	173	160
February	28	61	September	131	158
March	70	74	October	171	148
April	121	163	November	155	151
May	124	164	December	106	99
June	102	162			
July	130	154	Totals	1,336	1,552

	1887.	1888.
Average number of permits issued each month	111	129
Number of permits issued for opening improved streets on which deposits were made (not including openings by gas companies and other corporations under general deposits)	1,336	1,552
Number of permits issued for opening unimproved streets	3,153	4,582
Totals	4,489	6,134
Amount of cash deposit made	$28,726 50	$40,550 75
Amount retained as costs for repaving and inspection	10,618 24	13,673 90
Amount rebated to depositors	17,778 26	20,483 75
Average amount of cash deposit	21 51	26 13
Average amount retained for costs	7 95	8 81

PERMITS FOR USE OF STREETS.

Twenty-two hundred and eighty-five (2,285) permits were issued to sundry parties to occupy streets for the purpose of depositing materials thereon during the construction of buildings.

The number of permits issued monthly, the amount of cash deposits, and revenue received for use of streets is given in the following comparative statement:

MONTH.	Number of Permits Issued in 1887.	Number of Permits Issued in 1888.	MONTH.	Number of Permits Issued in 1887.	Number of Permits Issued in 1888.
January	40	68	August	148	229
February	78	160	September	119	170
March	149	299	October	86	146
April	119	310	November	65	100
May	68	298	December	68	71
June	75	228			
July	199	206	Totals	1,209	2,285

	1887.	1888.
Average number of permits issued each month	101	190
Amount of cash deposits made	$14,555 00	$20,403 00
Amount retained for use of street as per Section 1,104 Municipal Code	4,968 00	8,045 00
Amount rebated to depositors	6,247 00	7,948 00
Average amount of cash deposits	12 04	8 93
Average amount retained for use of streets	4 10	3 96

PARKS.

In the work of taking care of parks, the money at the disposal of the department was used in their maintenance. The amount of money expended for each park is shown in the bookkeeper's financial statement.

HOUSE MOVING.

Forty-six licenses were issued to house movers during the year. Thirteen hundred and thirteen (1,313) permits to move buildings were granted, of which 1,207 were for frame buildings, ninety-nine for brick, and seven for wire cable frames and reels, the total frontage of which is 26,131 lineal feet. The increase in the number of buildings moved during the year was 40½ per cent. Of this number, 210 were in the North division, 304 in the South division and 799 in the West division; 673 were one story, 610 two stories, 29 three stories, and one four stories high. Total cash receipts, $3,676, of which $2,930 were for $5.00 permits, $726 for $1.00 permits, and $20.00 for fines. The following table shows the number and character of the buildings moved each month, and the receipts from this source, apportioned by divisions:

MONTH.	No. of Permits.	Division.			Feet Frontage.	Average Frontage.	Frame.	Brick.	Heights.				Cash Receipts.
		North.	South.	West.					1-Story.	2-Story.	3-Story.	4-Story.	
January...	21	3	4	14	417	19.90	16	5	16	5	...	..	$ 77 00
February..	66	14	14	38	1,321	20.00	62	4	26	38	2	..	190 00
March....	142	17	36	89	2,707	19.07	130	12	75	65	2	.	382 00
April.....	193	34	43	116	3,835	19.87	179	14	114	75	4	..	533 00
May......	202	34	42	126	4,118	20.39	187	15	93	103	5	1	573 00
June......	146	20	37	89	2,911	20.00	140	6	60	83	3	..	434 00
July......	95	16	25	54	1,892	19.91	84	11	48	44	3	..	271 00
August ...	145	24	38	83	2,847	19.63	129	16	86	57	2	..	365 00
September.	112	20	18	74	2,249	20.08	103	9	59	50	3	..	316 00
October ...	91	16	19	56	1,854	20.37	83	8	52	37	2	..	227 00
November.	59	6	19	34	1,185	20.08	56	3	27	30	2	..	155 00
December.	41	6	9	26	795	19.40	38	3	17	23	1	..	133 00
Fines..	......	...	...	...	....	......	....	...	...	...	...	..	20 00
Totals..	1313	210	304	799	26,131	19.90	1207	106*	673	610	29	1	$3,676 00

* In this number is included seven iron cable reels.

SIDEWALKS.

The number of miles of sidewalks rebuilt during the year, including wood, stone and concrete, also miles of sidewalks, repaired, is shown in the following table:

DIVISION.	MATERIAL.			Total Miles.	Sidewalks Repaired.	Grand Total Miles.
	Wood.	Stone.	Concrete.			
North..............	17.85	2.80	.23	20.38	8.50	28.88
South..............	23.36	3.79	.18	27.33	20.76	48.09
West...............	92.42	6.85	.25	99.52	99.47	198.99
TOTAL..........	133.63	12.94	.66	147.23	123.73	270.96

In addition to the above there has been built 37.13 miles of sidewalk on ground not heretofore covered, distributed as follows:

North Division...................................	.51 miles.
South Division....................................	5.40 miles.
West Division......................................	31.22 miles.

This makes a total of 308.09 miles of sidewalk built, rebuilt and repaired, during the year. Included in the above is 19.64 miles of wooden walks built by the city, under special assessment.

The total number of miles of sidewalks under the control of the city and the West, South and Lincoln Park Commissioners at the close of the year, is given in the following summary:

UNDER CONTROL OF	MATERIAL.			TOTAL MILES.
	Wood. Miles.	Stone. Miles.	Concrete. Miles.	
City	1,028.72	99.55	16.34	1,144.61
South Park Commissioners	....	9.79	......	9.79
West Park Commissioners	....	10.63	......	10.63
Lincoln Park Commissioners	....	1.75	......	1.75
	1,028.72	121.72	16.34	1,166.78
Wood Sidewalk replaced by stone and concrete				5.67
Total miles in city				1,161.11

During the year the department constructed stone sidewalks as follows:

On St. Clair street, from Ohio street to Superior street,
On Twenty-second street, from State street to Indiana avenue,
On Forest avenue, from Thirty-first street to Douglas avenue,

for which a special assessment was levied, the work being done under contract.

CHICAGO, December 31, 1888.

MR. GEORGE W. DEAL,
Superintendent of Streets.

DEAR SIR:—I herewith present my Annual Report of Street Lamps for the year 1888. At the close of the year there were, including those on bridges, viaducts, parks and boulevards, 19,604 gas lamps and 5,474 oil lamps in the city, as follows:

GAS LAMPS.

DIVISION.	No. in City January 1, 1888.	No. Erected during year 1888.	Total.
West	10,002	1,499	11,501
South	4,602	368	4,970
North	2,924	209	3,133
Total	17,528	2,076	19,604

OIL LAMPS.

DIVISION.	Number in City January 1, 1888.	Number erected during year 1888.	Total.	Less number discontinued where Gas mains have been laid during year 1888.	Total.
West	2,201	1,831	4,032	507	3,525
South	1,214	294	1,508	130	1,378
North	603	59	662	91	571
Total	4,018	2,184	6,202	728	5,474

The following statement shows the number of gas lamps in the city at the commencement and close of each year, from the organization of the Department of Public Works in 1876 to date :

YEAR.	WEST DIVISION.			SOUTH DIVISION.			NORTH DIVISION.		
	Number of lamps Jan. 1.	Number added	Total.	Number of lamps Jan. 1.	Number added.	Total.	Number of lamps Jan. 1.	Number added.	Total.
1876.......	5,160	202	5,362	2,965	92	3,057	2,095	39	2,134
1877.......	5,362	97	5,439	3,057	47	3,104	2,134	34	2,168
1878.	5,439	42	5,481	3,104	17	3,121	2,168	15	2,183
1879.......	5,481	38	5,519	3,121	1	3,122	2,183	58	2,241
1880.......	5,519	137	5,656	3,122	31	3,153	2,241	30	2,271
1881.......	5,656	196	5,852	3,153	18	3,171	2,271	50	2,321
1882.......	5,852	289	6,141	3,171	27	3,198	2,321	9	2,330
1883.......	6,141	415	6,554	3,198	255	3,453	2,330	54	2,384
1884.......	6,554	1,004	7,558	3,453	133	3,586	2,384	165	2,549
1885... ...	7,558	594	8,152	3,586	223	3,809	2,549	59	2,608
1886.......	8,152	853	9,005	3,809	376	4,185	2,608	188	2,796
1887.......	9,005	997	10,002	4,185	417	4,602	2,796	128	2,924
1888.......	10,002	1,499	11,501	4,602	368	4,970	2,924	209	3,133

Total number added during the past twelve years:

West Division	6,341
South Division	2,005
North Division	1,038
Total	9,384
Number of gas lamps in city January 1, 1876	10,220
Total number of gas lamps in city December 31, 1888	19,604

The following statement shows the number of oil lamps erected in the city each year from their introduction in 1880 to the present date:

YEAR.	West Division.			South Division.			North Division.		
	Numb'r of Lamps Jan. 1.	Numb'r added during year.	Total.	Numb'r of Lamps Jan. 1.	Numb'r added during year.	Total.	Numb'r of Lamps Jan. 1.	Numb'r added during year.	Total.
1881......	257	......	257	97	......	97	220	.....	220
1882.. ..	257	675	932	97	501	598	220	315	585
1883......	932	262	1,194	598	......	598	535	36	571
1884......	1,194	125	1,319	598	189	787	571	......	571
1885......	1,319	790	2,109	787	111	898	571	63	634
1886......	2,109	272	2,381	898	447	1,345	634	50	684
1887......	2,145	56	2,201	1,285	less 70	1,214	618	less 15	603
1888......	2,201	1,324	3,525	1,214	164	1,378	603	less 32	571

Total number added during the past seven years:

West Division....................................	3,268
South Division....................................	1,281
North Division....................................	351
Total..	4,900
Total number of oil lamps in city January 1, 1881....	574
Total number of oil lamps in city December 31, 1888..	5,474

The number of lamps glazed to replace broken glass was 62,207, of which 33,269 were in the West Division and 28,938 in the South and North Divisions. The average per day was about ninety-one in the West Division and seventy-one in the North and South Divisions combined.

Five hundred and eighteen old lamps were repaired and painted. 1,689 new plain lamps and 1,089 corner or sign lamps were made. The number of lamps made for new lamp posts erected during the year was 2,076. Two thousand and fifty-nine boxes of glass were used in old and new work. A considerable amount of work was also done during the year for the bridge and street bureaus. For other items, see Commissioner's Report under head of Street Lamps.

Respectfully submitted,

JOHN STEWART,
Superintendent of Street Lamps.

STREET RAILWAYS.

During the year the different companies have laid pavement on the portions of the streets occupied by their tracks as follows:

PAVEMENT.

CORPORATION.	Granite Block. Square Yards.	Cobble Stone. Square Yards.	Wood Block. Square Yards.	Brick. Sq. Yards.	Total Sq. Yards.
N. Chicago St. R. R. Co.	5,576.2	7,843.1	8,652.5	....	22,071.8
Chicago City R'y Co...	12,000	....	....	....	12,000.0
W. Chicago St. R. R. Co	1,919	7,583	18,623	1,634	29,759.0
Chicago Pass. R'y Co..	....	13,446.3	18,152.9	....	31,599.2
Totals	19,495.2	28,872.4	45,428.4	1,634	95,430.0

Street Railway extensions were made by the different companies as follows:

NORTH CHICAGO STREET RAILROAD COMPANY.

STREET.	FROM	TO	LINEAL FEET	REMARKS.
Halsted	Clybourn av..	Center 2nd Bridge.	4,300	Double track, Horse
Dearborn ...	South Water.	Lake........	490	Double track, Horse
Dearborn....	Kinzie.......	South Water.	828	Double track, Horse
Total	....	....	5,618	1.06 miles.

DOUBLE TRACK, HORSE, CHANGED TO DOUBLE TRACK CABLE.

Centre.......	Clark	Lincoln av...	750	Double track, Cable
Lincoln av. .	Centre	Fullerton av..	3,745	Double track, Cable
Total....	....	... .	4,495	0.85 miles.

CHICAGO CITY RAILWAY COMPANY.

STREET.	FROM	TO	Lineal feet	REMARKS.
Twenty-second .	State...........	River..........	3,517	Double track.
Twenty-sixth....	Cottage Grove av	Halsted	7,959	Double track.
Wallace.........	Twenty-sixth....	Thirty-first	2,647	Double track.
Total.......	....	.. ..	14,123	2.67 miles.

WEST DIVISION STREET RAILROAD COMPANY.

STREET.	FROM	TO	Lineal feet	REMARKS.
Ogden avenue	Albany avenue	Kedzie avenue	700	Single track.
Armitage av	Milwaukee av	Barn on Armitage	400	Single track.
North Halsted	Indiana	Center of Bridge	2,443	Double track.
Fifth avenue	Polk	Twelfth	1,722	Double track.
Twelfth	Fifth avenue	Canal	1,198	Double track.
Polk	Fifth avenue	Canal	763	Double track.
Armitage avenue	Milwaukee av	California av	2,300	Single-track 400 ft., balance double-track
California av	Armitage avenue	North avenue	2,640	Single track.
Total			12,166	2.30 miles.

CHICAGO PASSENGER RAILWAY COMPANY.

STREET.	FROM	TO	Lineal feet	REMARKS.
Austin avenue	Desplaines	Center avenue	3,514	Double track.
Center avenue	Austin avenue	Erie	1,279	Double track.
Erie	Center avenue	Ashland avenue	2,640	Double track.
Ashland avenue	Erie	North avenue	6,273	Double track.
Twenty-first	Center avenue	Blue Island av	2,172	Double track.
Sangamon	Adams	Austin avenue	3,968	Double track.
Total			19,846	3.76 miles.

LIST OF STREETS OCCUPIED BY STREET RAILWAY TRACKS, OPERATED AND CONTROLLED BY THE WEST CHICAGO STREET RAILROAD COMPANY.

STREET.	FROM	TO	CHARACTER OF PAVEMENT.	LIN. FEET.	REMARKS.
Milwaukee avenue	Lake	Western avenue	Cobble stone and granite	17,343	
North avenue	Milwaukee avenue	Humboldt Park	Cobble stone	5,333	
Chicago avenue	Milwaukee avenue	Leavitt	Cobble stone	7,300	
Division	Milwaukee avenue	California avenue	Cobble stone	8,184	
Leavitt	Indiana	Chicago avenue	Wood block	1,845	
Indiana	Milwaukee avenue	Western avenue	Cobble stone	10,665	
Noble	Milwaukee avenue	Blackhawk	Cobble stone	1,675	
Blackhawk	Noble	Holt	Cedar block	672	
Holt	Blackhawk	North avenue	Cedar block	1,335	
North avenue	Holt	Ashland avenue	Cobble stone	665	
Ashland avenne	North avenue	Clybourn place	Cobble stone	2,020	
Armitage avenue	Milwaukee avenue	California avenue	Wood block	2,300	
California avenue	Armitage avenue	North avenue	Wood block	2,640	
Clybourn place	Ashland avenue	Wood	Cedar block	1,300	
Lake	State	Fortieth	Cobble stone to Rockwell, balance wood block	26,970	
Randolph	Michigan avenue	St. John's place	Cobble stone, granite next rail to Halsted	11,330	
Madison	State	Fortieth	Cobble stone	26,890	
Van Buren	State	Kedzie avenue	Granite to bridge, cobble to Western, bal. w. b.	18,490	
State	Lake	Madison	Cobble stone, granite bet. tracks	1,350	
Fifth avenue	Randolph	Polk	Granite to Van Buren, balance cobble stone	3,450	
Twelfth	Canal	Ogden avenue	Cobble stone to Ashland, balance wood block	12,190	
Clinton	Fulton	Twelfth	Cobble stone to Harrison, balance macadam	7,188	Single track Harrison to 12th
Jefferson	Van Buren	Meagher	Cobble stone to Twelfth, balance wood block	5,748	Single track Van Buren to 12th
Canal	Harrison	Canalport avenue	Cobble stone	8,490	
Canalport avenue	Canal	Halsted	Cobble stone		
Harrison	Canal	Clinton	Cobble stone		
Halsted	Indiana	South Branch River	Cobble stone	16,210	
O'Neill	Halsted	Westward	Wood block	200	
Blue Island avenue	Harrison	Western avenue	Cobble stone to Twenty-first, balance wood block	15,510	
Meagher	Jefferson	Canal	Cedar block	845	Single track.
Eighteenth	Halsted	Leavitt	Cobble stone to Wood, balance wood block	9,240	Single track Wood to Leavitt.

Leavitt	Eighteenth	Blue Island avenue	Wood block	3,985	
Ogden avenue	Randolph	Douglas Park	Cobble stone to Twelfth, balance wood block	16,425	
Western avenue	Lake	Van Buren	Cobble stone	3,115	
Kedzie avenue	Van Buren	Madison	Wood block	1,850	
Ogden avenue	Albany avenue	Kedzie avenue	Wood block	700	Single track.
Armitage avenue	Milwaukee avenue	Barn on Armitage avenue	Wood block	400	Single track.
North Halsted	Indiana	Center of bridge	Wood block	2,443	
Fifth avenue	Polk	Twelfth	Wood block	1,722	
Twelfth	Fifth avenue	Canal	Wood block	1,198	
Polk	Fifth avenue	Canal	Wood block	763	
			Total	259,979	49.24 miles.

LIST OF STREETS OCCUPIED BY STREET RAILWAY TRACKS, OPERATED AND CONTROLLED BY THE CHICAGO PASSENGER RAILWAY COMPANY:

STREET.	FROM	TO	CHARACTER OF PAVEMENT.	LIN. FEET.	REMARKS.
Adams	Michigan avenue	Center avenue	Cobble stone and granite	8,045	
Washington	Michigan avenue	Franklin	Cobble stone and granite	3,005	
Franklin	Washington	Harrison	Cobble stone and granite	3,200	
Michigan avenue	Washington	Adams	Cobble stone	1,349	
Harrison	Sherman	Western avenue	Cobble stone	14,470	
Desplaines	Adams	Harrison	Cobble stone, wood block between tracks	1,775	
Center avenue	Adams	Twenty-first	Cobble stone, 13th place to 14th st. macadam	8,990	
Twenty-first	Blue Island avenue	Western avenue	Cobble stone, wood block between tracks	5,780	
Western avenue	Harrison	Twelfth	Cobble stone, wood block between tracks	2,640	
Austin avenue	Desplaines	Center avenue	Cedar block	3,514	
Center avenue	Austin avenue	Erie	Cedar block	1,279	
Erie	Center avenue	Ashland avenue	Cedar block	2,640	
Ashland avenue	Erie	North avenue	Cobble stone	6,273	
W. Twenty-first	Center avenue	Blue Island avenue	Cobble stone	2,172	
Sangamon	Adams	Austin avenue	Cedar block	3,968	
			Total	69,100	18.09 miles.

STREET RAILWAYS—NORTH DIVISION.

STREET.	FROM	TO	Lineal Feet.		OPERATED BY
Clark	Bridge	Fullerton avenue	13,533	Cable north of Illinois	North Chicago Street R. R. Co.
Chicago avenue	Clark	Larrabee	3,176		" "
Clybourn avenue	Division	Fullerton avenue	11,191		" "
Center	Lincoln avenue	Racine avenue	5,280	Single track	" "
Division	State	Clybourn avenue	2,957		" "
Division	Clybourn avenue	Bridge	4,780		" "
Fullerton avenue	Lincoln avenue	Racine avenue	2,637	Single track	" "
Garfield avenue	Lincoln avenue	Racine avenue	4,608	Single track	" "
Halsted	Clybourn avenue	Fullerton avenue	5,653		" "
Illinois	Market	Wells	860	Single track	" "
Illinois	Clark	Wells	800	Cable	" "
Kinzie	State	Market	2,446		" "
Lincoln avenue	Center	Fullerton avenue	3,806		" "
La Salle	Illinois	Tunnel	1,196	Cable	" "
Larrabee	Chicago avenue	Webster avenue	9,264		" "
Market	Kinzie	Michigan	299		" "
Market	Michigan	Illinois	283	Single track	" "
Market	Illinois	Chicago avenue	2,013		" "
Market	Chicago avenue	Division	2,643	Single track	" "
Michigan	Market	Wells	866	Single track	" "
North avenue	Clark	Bridge	6,840		" "
Racine avenue	Clybourn avenue	Fullerton avenue	2,966	Single track	" "
State	Bridge	Division	6,029		" "
Sedgwick	Division	Center	5,228		" "
Sedgwick	Chicago avenue	Division	2,642	Single track	" "
Wells	Bridge	Clark	10,541	Cable north of Illinois	" "
Webster avenue	Lincoln avenue	Racine avenue	3,961	Single track	" "
Center	Lincoln avenue	Clark	780		" "
Halsted	Clybourn avenue	Center second bridge	4,300		" "
Dearborn avenue	Kinzie	South Water	828		" "
		Total	122,406	23.18 miles.	

STREET RAILWAYS—SOUTH DIVISION.

STREET.	FROM	TO	LIN. FEET.		OPERATED BY
Lake	State	Wabash avenue	450	Cable, single track	Chicago City Railway Company.
State	Lake	Egan avenue	22,460	Cable	" "
Wabash avenue	Lake	Twenty-second	11,900	Cable	" "
Twenty-second	State	Indiana avenue	1,320	Cable	" "
Eighteenth	Wabash avenue	Indiana avenue	870	Cable	" "
Indiana avenue	Eighteenth	Egan avenue	16,160	Single track	" "
Clark	Washington	Twenty-second	10,985		" "
Archer avenue	State	Western avenue	18,607		" "
Hanover	Archer avenue	Twenty-ninth	4,951		" "
Twenty-ninth	Hanover	Butler			
Butler	Twenty-ninth	Thirty-first			
Ashland avenue	Archer avenue	Thirty-ninth	5,290		" "
Thirty-first	Lake	Pitney avenue	14,388		" "
Pitney court	Thirty-first	Archer avenue			
Halsted	River	Egan avenue	9,960		" "
Douglas avenue	Cottage Grove ave.	Stanton avenue	3,702		" "
Stanton avenue	Douglas avenue	Egan avenue			
Egan avenue	Cottage Grove ave.	Wentworth avenue	6,780		" "
Madison	State	Wabash avenue	450	Cable	" "
Wentworth avenue	Archer avenue	Egan avenue	11,070		" "
Douglas avenue	State	Ullman	7,920		" "
Ullman	Douglas avenue	Thirty-first	2,640		" "
Cottage Grove ave.	Twenty-second	Egan avenue	11,450	Cable	" "
Van Buren	Clark	Wabash avenue	1,280		" "
Twenty-second	State	River	3,517		" "
Twenty-sixth	Cottage Grove ave.	Halsted	7,959		" "
Wallace	Twenty-sixth	Thirty-first	2,647		" "
		Total	176,756	33.48 miles.	

STREET RAILWAYS—SOUTH DIVISION—CONTINUED.

STREET.	FROM	TO	LIN. FEET.		OPERATED BY
Clark	Washington	Bridge	1,510		North Chicago Street R. R. Co.
Dearborn	Lake	Polk	4,851	One track, cable Randolph to Monroe.	" "
La Salle	Tunnel	Monroe	2,394	Cable, single track	" "
Monroe	La Salle	Dearborn	800	Cable, single track	" "
Randolph	Dearborn	La Salle	800	Cable, single track	" "
State	Lake	Bridge	570		" "
Wells	Randolph	Bridge	1,060		" "
Dearborn	South Water	Lake	490		" "
		Total	12,475	2.36 miles.	
Lake	State	Bridge	2,585		West Chicago Street R. R. Co.
Randolph	Michigan avenue	Bridge	3,570		" "
Madison	State	Bridge	2,330		" "
Van Buren	State	Bridge	2,620		" "
Fifth avenue	Randolph	Polk	3,450		" "
State	Lake	Madison	1,850		" "
Fifth avenue	Polk	Twelfth	1,722		" "
		Total	18,127	3.43 miles.	
Michigan avenue	Washington	Adams	1,349		Chicago Passenger Railway Co.
Washington	Michigan avenue	Franklin	3,005		" "
Franklin	Washington	Harrison	3,200		" "
Adams	Michigan avenue	Bridge	3,720		" "
Harrison	Sherman	Bridge	900		" "
		Total	12,174	2.31 miles.	

STREET RAILWAYS—WEST DIVISION.

STREET.	FROM	TO	LIN. FEET.		OPERATED BY
Milwaukee avenue	Lake	Western avenue	17,343		West Chicago Street R. R. Co.
North avenue	Milwaukee avenue	Humboldt park	5,333		" "
Chicago avenue	Milwaukee avenue	Leavitt	7,300		" "
Leavitt	Indiana	Chicago avenue	1,845		" "
Indiana	Milwaukee avenue	Western avenue	10,665		" "
Lake	Bridge	Fortieth	24,385		" "
Randolph	Bridge	St. John's place	7,760		" "
Madison	Bridge	Fortieth	24,060		" "
Van Buren	Bridge	Kedzie avenue	15,870		" "
Noble	Milwaukee avenue	Blackhawk	1,675		" "
Blackhawk	Noble	Holt	672		" "
Holt	Blackhawk	North avenue	1,335		" "
North avenue	Holt	Ashland avenue	665		" "
Ashland avenue	North avenue	Clybourn place	2,020		" "
Clybourn place	Ashland avenue	Wood	1,300		" "
Division	Milwaukee avenue	California avenue	8,184		" "
Twelfth	Canal	Ogden avenue	12,190		" "
Clinton	Fulton	Twelfth	7,188	Single track, Harrison to Twelfth	" "
Jefferson	Van Buren	Meagher	5,748	Single track, Van Buren to Twelfth	" "
Canal	Harrison	Canalport avenue	8,490		" "
Canalport	Canal	Harrison			
Harrison	Canal	Clinton			
Meagher	Jefferson	Canal	845	Single track	" "
Halsted	Indiana	South branch river	16,210		" "
O'Neill	Halsted	Westward	200		" "
Blue Island avenue	Harrison	Western avenue	15,510		" "
Eighteenth	Halsted	Leavitt	9,240	Single track, Wood to Leavitt	" "
Leavitt	Eighteenth	Blue Island avenue	3,985		" "

STREET RAILWAYS—WEST DIVISION—CONTINUED.

STREET.	FROM	TO	LIN. FEET.		OPERATED BY
Ogden avenue	Randolph	Douglas park	16,425		West Chicago Street R. R. Co.
Western avenue	Lake	Van Buren	3,115		" "
Kedzie avenue	Van Buren	Madison	1,850		" "
Ogden avenue	Albany avenue	Kedzie avenue	700	Single track	" "
Armitage avenue	Milwaukee avenue	Barn on Armitage	400	Single track	" "
North Halsted	Indiana	Center of bridge	2,443	Double track	" "
Twelfth	Bridge	Canal	1,198	Double track	" "
Polk	Bridge	Canal	763	Double track	" "
Armitage avenue	Milwaukee avenue	California avenue	2,300	400 double, rest single track	" "
California avenue	Armitage avenue	North avenue	2,640	Single track	" "
		Total	241,852	45.8 miles.	
Adams	Bridge	Center avenue	4,325		Chicago Passenger Railway Co.
Desplaines	Adams	Harrison	1,775		" "
Harrison	Bridge	Western avenue	13,570		" "
Center avenue	Adams	Twenty-first	8,990		" "
Twenty-first	Blue Island avenue	Western avenue	5,780		" "
Western avenue	Harrison	Twelfth	2,640		" "
Austin avenue	Desplaines	Center avenue	3,514		" "
Center avenue	Austin avenue	Erie	1,279		" "
Erie	Center avenue	Ashland avenue	2,640		" "
Ashland avenue	Erie	North avenue	6,273		" "
Twenty-first	Center avenue	Blue Island avenue	2,172		" "
Sangamon	Adams	Austin avenue	3,968		" "
		Total	56,926	10.78 miles.	
North avenue	Bridge	Milwaukee avenue	5,630		North Chicago Street R. R. Co.
Division	Bridge	Milwaukee avenue	2,630		" "
		Total	8,260	1.57 miles.	
		Grand Total West Division	307,038	58.15 miles.	

STREET RAILWAYS—RECAPITULATION.

CORPORATION.	North Division.	South Division.	West Division.	Total Miles.
North Chicago Street Railroad Co......	23.18	2.36	1.57	27.11
Chicago City Railway Co..............	....	33.48	....	33.48
West Chicago Street Railroad Co... ..	....	3.43	45.80	49.23
Chicago Passenger Railway Co.........	....	2.31	10.78	13.09
Total miles.....	23.18	41.58	58.15	122.91

CORPORATION.	Horse Track.	Cable Track.	Total Miles.
North Chicago Railroad Company.......	20.62	6.49	27.11
Chicago City Railway Company............	24.22	9.26	33.48
West Chicago Street Railroad Company........	49.23	....	49.23
Chicago Passenger Railway Company...........	13.09	....	13.09
Total miles............	107.16	15.75	122.91

IMPROVEMENT OF STREETS FROM 1835 TO DATE.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	When Ordered.
1835				
La Salle	South Water	Lake	Grading	
1836				
Clark	Town of Chicago		Grading	
Dearborn	Town of Chicago		Grading	
Kinzie	Town of Chicago		Grading North Division.	
Ontario	Town of Chicago		Grading	
Rush	Town of Chicago		Grading	
1842				
North Branch	Kinzie	Desplaines	Grading	
1844				
Lake	State	Dearborn	Planking	August 8.
1846				
Randolph	Chicago River	City limits	Graded and repaired	April 10.
1849				
Approaches to Madison street bridge			Planking	November 28.
Clark	Chicago River	Kinzie	Planking	October 1.
Canal	Randolph	Kinzie	Planking	
Kinzie	Clark	Chicago River	Planking	October 1.
Market	Randolph	Lake	Planking	
Randolph	State	Dearborn	Planking	
South Water	Lake	Fifth avenue	Planking	April 12.
State	Randolph	Lake	Planking	
1850				
Clark	South Water	Randolph	Planking	
Clark	River	Chicago avenue	Planking	
Randolph	Center avenue	Ogden avenue	Planking	
1851				
Canal	Van Buren	Twelfth	Planking	Permit granted Mch. 25

Kinzie	Cass	Wells	Planking	August 4.
Market	Jackson	Van Buren	Planking	July 28.
Milwaukee avenue	Kinzie	Division	Re-planking	Permit granted July 23
1852				
Archer avenue	State	Twenty-second	Planking	June 7.
Clark	Randolph	Twelfth	Planking	March 28.
Clark	Indiana	North avenue	Planking	September 3.
Carroll avenue	Desplaines	Canal	Planking	Permiss'n gr'n'd May 3
Desplaines	Kinzie	Carroll avenue	Planking	
Kinzie	Wells	Chicago River	Planking	April 19.
Kinzie	Bridge	Water	Planking	June 18.
Lake	La Salle	Wells	Re-planking	May 31.
Lake	Bridge	Western avenue	Planking	May 10.
Michigan avenue	Twelfth	Michigan Central Depot	Planking	June.
Michigan	Clark	Cass	Planking	April 2.
Ohio	Jefferson	Milwaukee avenue	Planking	June 18.
Randolph	Around Market Hall		Planking	November 9.
Randolph	Chicago River	Franklin	Planking	November 9.
State	Twelfth	Twenty-second	Re-planking	September 17.
Twelfth	State	Michigan avenue	Planking	June —.
West Water	Kinzie	Jefferson	Planking	June 18.
1853				
Canal	Van Buren	Sixteenth	Planking	June 6.
Halsted	Randolph	Milwaukee avenue	Planking	May 23.
Madison	Jefferson	Union	Re-planking	
Madison	Ogden avenue	Western avenue	Planking	April 25.
Randolph	Dearborn	State	Re-planking	
State	Lake	South Water	Planking	June 6.
1854				
Blue Island avenue	Harrison	Twenty-second	Planking	March 6.
Clark	Lake	Bridge	Re-planking	April 10.
Clark	North avenue	City Limits	Planking	May 29.
Dearborn	Madison	Washington	Planking	May 3.
Harrison	Canal	Halsted	Planking	April 3.
Maxwell	Canal	Blue Island avenue	Planking	February 6.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	When Ordered.
Randolph	Canal	Clinton	Planking	April 21.
Randolph	Desplaines	Halsted	Planking	July 3.
South Water	Clark	Dearborn	Planking	April 10.
State	Twelfth	Archer avenue	Planking	August 24.
South Water	Dearborn	Wabash avenue	Re-planking	October 3.
State	Lake	Chicago River	Re-planking	October 3.
Van Buren	Canal	Chicago River	Planking	March 3.
Wells	Madison	Van Buren	Planking	May 3.
Wells	Kinzie	Whiting	Planking	April 24.
1855				
Clinton	Randolph	Madison	Planking	September 6.
†Chicago avenue	Clark	Pine	Macadam	November 1.
Clark	Polk	Washington	Re-planking	November 13.
Chicago avenue	Clark	Bridge	Planking	September 6.
*Cottage Grove avenue	Twenty-second	Thirty-first	Planking	December 31.
Lake	State	Michigan avenue	Cobblestone	
Milwaukee avenue	Kinzie	Division	Macadam	July 30.
North Water	Cass	St. Clair	Planking	September 17.
Ogden avenue	Madison	Western avenue	Planking	May 25.
Randolph	Clinton	Desplaines	Planking	May 25.
State	Harrison	Madison	Re-planking	
South Water	Wabash avenue	Illinois Central R. R. Co.	Limestone blocks	
*State	Archer avenue	Twenty-second	Planking	December 31.
*Twenty-second	State	Cottage Grove avenue	Planking	December 31.
Wells	Van Buren	160 feet south of Polk	Macadam	
Water	Lake	Randolph	Planking	April 19.
1856				
Clark	Polk	Taylor	Re-planking	October 27.
Clark	Chicago River	Ontario	Re-planking	
La Salle	Lake	South Water	Re-planking	July 23.
Randolph	River	Desplaines	Re-planking	August 14.

South Water	Clark	Franklin	Cobblestone	
Market	Van Buren	Congress	Macadam	July 28.
Madison	Market	Dock line	Re-planking	October 27.
Madison	Chicago River	Desplaines	Planking	September 22.
Milwaukee avenue	Elston avenue	Wood	Planking	March 8.
Wells	Lake	South Water	Nicholson block	
1857				
Archer avenue	State	Twentieth	Macadam	April 20.
Charles	Van Buren	Harrison	Planking	April 13.
Canal	Van Buren	Eighteenth	Macadam	May 4.
Clark	South Water	Lake	Boulder stone	
Clark	Taylor	Fourteenth	Planking	May 25.
Clinton	Kinzie	Harrison	Planking	July 27.
Harrison	Halsted	Western avenue	Planking	May 25.
Jefferson	Kinzie	Ohio	Planking	March 30.
La Salle	Lake	South Water	Limestone blocks	November 9.
Michigan	Cass	North Water	Planking	May 25.
Michigan avenue	Madison	Rush street bridge	Nature of Pavement not given	
Madison	Halsted	Desplaines	Planking	September 27.
Randolph	Halsted	Morgan	Macadam	May 4.
Rush	Michigan	North Water	Planking	May 25.
Randolph	Chicago River	Michigan avenue	Boulder stone	
State	Lake	Madison	Boulder stone	July 20.
Sixteenth	State	Clark	Macadam	September 14.
Twelfth	State	Chicago River	Macadam *	April 27.
Twelfth	River	Western avenue	Planking	May 11.
Van Buren	Canal	Ogden avenue	Planking	May 11.
Water	Kinzie	Owen	Planking	March 30.
1858.				
Clark	Randolph	Washington	Nicholson block	
Clark	Madison	Washington	Nicholson block	September 20.
Canal	Lake	Randolph	Planking	June 7.
Dearborn	Randolph	Madison	Limestone blocks	
Desplaines	Randolph	Erie	Planking	June 19.

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* Order changed to macadam per order passed June 9, 1856; re-ordered April 20, 1857.

† Improvement postponed by order of Council, passed December 17, 1855.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	When Ordered.
Eighteenth	Canal	State	Macadam	August 16.
Kinzie	Clark	Chicago River	Boulder stone	June 7.
Lake	Halsted	Western avenue	Macadam	June 19.
La Salle	Randolph	Washington	Nicholson block	April 26.
Lake	Canal	Halsted	Planking	May 10.
Madison	Halsted	Sangamon	Macadam	
Market	Randolph	Lake	Boulder stone	
Michigan avenue	Van Buren	Congress	Graveling	
Madison	Wells	Bridge	Macadam	
Milwaukee avenue	Kinzie	Elston avenue	Macadam	June 7.
Park avenue	Randolph	Lake	Macadam	August 16.
Polk	State	Clark	Macadam	November 8.
Randolph	Halsted	Union park	Macadam	May 10.
State	Madison	Twelfth	Boulder stone	
Union	Madison	Randolph	Macadam	August 16.
*Washington	Clark	La Salle	Limestone blocks	
Washington	La Salle	Wells	Boulder stone	
Washington	Wells	Market	Limestone Blocks	
1859				
Canal	Van Buren	Washington	Graveling	August 29.
Clark	Randolph	Lake	Nicholson block	
Clark	Madison	Polk	Nicholson block	April 25.
Couch place	Dearborn	80 feet west of Clark	Boulder stone	June 20.
Canal	Randolph	Washington	Macadam	April 25.
Haddock place	Clark	LaSalle	Boulder stone	August 15.
Indiana	River	Wells	Planking	April 25.
Madison	Sangamon	Western avenue	Macadam	April 25.
Michigan avenue	Randolph	Van Buren	Graveling	June 20.
Michigan avenue	Congress	Twelfth	Graveling	
Market	Randolph	Washington	Graveling	June 20.

Market	Washington	Madison	Graveling	July 23.
Michigan avenue	Lake	Randolph	Graveling	August 24.
River	Dock	South Water	Nicholson block	June 11.
Rush	Chicago avenue	State	Planking	June 20.
State	Rush	Hudson avenue	Planking	
State	Archer avenue	Twelfth	Graveling	July 14.
Twelfth	State	Michigan avenue	Graveling	August 24.
Twentieth	State	Archer avenue	Graveling	September 2.
Water	Randolph	Washington	Planking	April 25.
Wabash avenue	Randolph	Lake	Graveling	May 3.
Wells	Randolph	Madison	Canal block stone	June 20.

The records fail to show where any work was done during the year of 1860. Evidently there was none.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
1861				
Lake	Wabash avenue	River	Wooden block	3,003
South Water	Dearborn	Wabash avenue	Boulder stone	662
Total number of lineal feet				3,665
Number of miles				0.69
1862				
Clark	Lake	Bridge	Boulder stone	450
Kinzie	Clark	State	Boulder stone	775
Lake	Wabash avenue	Central avenue	Nicholson block	575
Monroe	Clark	State	Macadam	751
South Water	Franklin	Lake	Nicholson block	460
Wells	Kinzie	Clark	Macadam	10,245
Wabash avenue	Lake	South Water	Graveling	810
Total number of lineal feet				13,566
Number of miles				2.57

* Order changed to Nicholson block pavement by Council, September 20, 1858.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
1863				
Canal	Lake	Fulton	Macadam	320
Canal	Twelfth	Lumber	Macadam	4,200
Clark	Wells	Fullerton avenue	Graveling	3,600
Dearborn place	Lake	South Water	Planking	310
Haddock place	Wabash avenue	East terminus	Planking	216
Intersection	Clark	Randolph	Nicholson block	80
Intersection	Clark	Madison	Nicholson block	80
Market	Madison	Van Buren	Macadam	1,800
Total number of lineal feet				10,606
Total number of miles				2
1864				
Canal	Twelfth	Sixteenth	Macadam	2,625
Lake	Chicago River	Halsted	Wooden block	2,582
Milwaukee avenue	Elston Avenue	North avenue	Macadam	7,470
Total number of lineal feet				12,677
Total number of miles				2.40
1865				
Benton place	State	Wabash avenue	Planking	350
Calhoun place	State	Dearborn	Planking	335
Couch place	Fifth avenue	Franklin	Planking	320
Court place	State	Dearborn	Planking	335
Couch place	Franklin	Market	Planking	320
Clark	Wells	North avenue	Graveling	1,800
Custom House place	Monroe	Dearborn	Wooden block	272
Dearborn	Madison	Monroe	Wooden block	397
Fifth avenue	Madison	Van Buren	Wooden block	1,588
Michigan	Clark	Cass	Wooden block	981
State	Kinzie	Michigan avenue	Wooden block	218

South Water	Wabash avenue	Michigan avenue	Wooden block	372
South Water	Clark	Franklin	Wooden block	1,200
Twelfth	Canal	Beach	Planking	390
Wabash avenue	Randolph	Adams	Wooden block	1,840
Total number of lineal feet				10,718
Total number of miles				2.03
1866				
Archer avenue	Ashland avenue	Western avenue	Cindering	6,670
Canal	Adams	Twelfth	Macadam	4.300
Couch place	Dearborn	Clark	Planking	320
Calhoun place	Clark	La Salle	Wooden block	322
Fifth avenue	Van Buren	Taylor	Wooden block	2,384
Fifth avenue	Lake	South Water	Wooden block	315
Haddock place	State	Wabash avenue	Wooden block	348
Haddock place	Franklin	Fifth avenue	Planking	320
La Salle	Madison	Washington	Wooden block	325
Madison	Chicago River	Halsted	Wooden block	2,300
Michigan avenue	Randolph	Park place	Graveling	5,864
Prairie avenue	Sixteenth	Twenty-second	Graveling	2,600
Pacific avenue	Van Buren	Taylor	Wooden block	2,382
Randolph	Halsted	West Water	Wooden block	2,370
Sherman	Van Buren	Harrison	Wooden block	800
Sixteenth	State	Prairie avenue	Graveling	1,660
Van Buren	State	Michigan avenue	Wooden block	720
Van Buren	State	Chicago River	Wooden block	2,550
Wabash avenue	Adams	Twenty-second	Wooden block	9,580
Washington	State	Michigan avenue	Wooden block	710
Total number of lineal feet				46,835
Total number of miles				8.87
1867				
Canal	Lake	Madison	Wooden block	1,821
Chicago avenue	River	North Clark	Macadam	3,373

IMPROVEMENT OF STREETS FROM 1835 TO DATE.—Continued.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Clark	Polk	Twelfth	Wooden block	1,679
Clark	Chicago River	Chicago avenue	Wooden block	3,303
Clinton	Madison	Lake	Wooden block	1,167
Elston avenue	North avenue	Clybourn place	Cindering	2,350
Fifth avenue	Lake	Randolph	Wooden block	330
Fisk	Twenty-second	Lumber	Planking	1,224
Halsted	Thirty-first	Egan avenue	Macadam	5,263
Halsted	Archer avenue	Thirty-first	Macadam	3,253
Halsted	Lake	Harrison	Wooden block	4,054
Indiana avenue	Sixteenth	Twenty-second	Wooden block	2,590
Jefferson	Fulton	North of Carroll avenue	Macadam	610
Kinzie	Clark	Chicago river	Wooden block	2,056
La Salle	Jackson	Madison	Wooden block	1,880
Market	Madison	Van Buren	Macadam	1,776
Michigan avenue	Lake	South Water	Wooden block	310
Michigan avenue	Park place	Twelfth	Graveling	253
Michigan avenue	Twelfth	Twenty-second	Graveling	5,280
Milwaukee avenue	Desplaines	Elston avenue	Wooden block	4,315
Monroe	State	Michigan avenue	Wooden block	726
Noble	North avenue	Milwaukee avenue	Cindering	3,541
North avenue	Noble	Elston avenue	Cindering	200
Rush	Kinzie	Chicago avenue	Graveling	2,217
State	Michigan	Chicago avenue	Wooden block	2,390
Twenty-second	Morgan	Ashland avenue	Planking	3,910
Wabash avenue	Randolph	South Water	Wooden block	348
Total number of lineal feet				60,063
Number of miles				11.37

1868				
Adams	Michigan avenue	State	Wooden Block	720
Blue Island avenue	Twelfth	Twenty-second	Macadam	6,332
Blue Island avenue	Harrison	Twelfth	Wooden block	3,080
Calhoun place	Clark	Dearborn	Wooden block	320
Clark	Chicago avenue	Division	Wooden block	2,556
Franklin	South Water	Lake	Wooden block	816
Franklin	Randolph	Madison	Wooden block	702
South Halsted	Harrison	Viaduct	Wooden block	4,836
Harmon Court	State	Michigan avenue	Wooden block	724
Jefferson	Randolph	Fulton	Wooden block	706
LaSalle	Jackson	Van Buren	Wooden block	397
Michigan	Clark	Kingsbury	Wooden block	1,821
Michigan avenue	Randolph	Lake	Wooden block	708
Prairie avenue	Twenty second	Cottage Grove avenue	Graveling	813
Twenty-second	State	South Park avenue	Wooden block	2,672
Van Buren	Canal	Halsted	Wooden block	2,008
Total number of lineal feet				28,771
Number of miles				5.46
1869				
Adams	State	Market	Wooden block	2,373
Adams	Bridge	Halsted	Wooden block	2,335
Adams	Halsted	Ashland avenue	Wooden block	5,189
Archer avenue	State	Ogden Slip	Wooden block	4,786
Canal	Madison	Twelfth	Wooden block	5,308
Canal	Twelfth	Sixteenth	Wooden block	2,723
Clark	Division	North avenue	Wooden block	2,581
Clinton	Lake	Kinzie	Wooden block	1,033
Clinton	Madison	Van Buren	Wooden block	1,588
Dearborn avenue	North Water	Chicago avenue	Wooden block	2,497
Dearborn avenue	Chicago avenue	North avenue	Wooden block	5,203
Dearborn place	Randolph	Washington	Wooden block	385
Desplaines	Van Buren	Ohio	Wooden block	4,825
Division	Clark	Clybourn avenue	Wooden block	2,071
Eighteenth	Wabash avenue	Chicago River	Wooden block	2,308

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Huron	Clark	State	Wooden block	678
Jefferson	Randolph	Van Buren	Wooden block	2,375
Kinzie	River	Halsted	Wooden block	2,100
Lake	Halsted	Ashland avenue	Wooden block	5,235
Madison	Center avenue	Halsted	Wooden block	2,594
Madison	Chicago River	State	Wooden block	2,715
Monroe	Clark	Market	Wooden block	1,620
Ohio	Clark	St. Clair	Wooden block	2,026
Pine	Michigan	Chicago avenue	Wooden block	2,320
Polk	State	Chicago River	Wooden block	1,965
Sangamon	Van Buren	Fulton	Wooden block	3,248
Sherman	Harrison	Taylor	Wooden block	1,590
South Park avenue	Twenty-second	Twenty-ninth	Wooden block	3,924
Twelfth	State	Michigan avenue	Wooden block	721
Twelfth	State	Chicago River	Wooden block	1,619
Wabash avenue	Twenty-second	Twenty-ninth	Wooden block	3,924
Washington	Water	Elizabeth	Wooden block	5,344
Washington	Elizabeth	Union Park	Wooden block	1,658
Wells	Chicago River	Chicago avenue	Wooden block	3,817
Wells	Chicago avenue	Division	Wooden block	2,556
Total number of lineal feet				96,784
Number of miles				18.33
1870				
Aberdeen	Madison	Harrison	Wooden block	2,475
Archer avenue	Ogden slip	Halsted	Wooden block	1,474
Calumet avenue	Cottage Grove avenue	Twenty-fourth	Wooden block	842
Calumet avenue	Twenty-first	Twenty-fourth	Wooden block	1,758
Canal	Sixteenth	Eighteenth	Wooden block	860

Canalport avenue	Canal	Halsted	Wooden block	2,323
Central avenue	Randolph	72 feet south of Lake	Wooden block	270
Central avenue	South Water	458 feet south	Wooden block	458
Chicago avenue	Clark	Pine	Wooden block	1,918
Clybourn avenue	Division	North avenue	Wooden block	3,650
Clybourn avenue	North avenue	Fullerton avenue	Cindering	7,400
Clybourn place	Clybourn avenue	Elston avenue	Cindering	2,088
Dearborn	Monroe	Jackson	Wooden block	793
Desplaines	Van Buren	Harrison	Wooden block	795
Erie	Chicago River	Pine	Wooden block	4,755
Fourteenth	Michigan	State	Wooden block	720
Halsted	Lake	Indiana	Wooden block	2,011
Harrison	State	Fifth avenue	Wooden block	1,553
Harrison	Canal	Halsted	Wooden block	2,008
Illinois	Wells	State	Wooden block	1,404
Indiana	Clark	St. Clair	Wooden block	2,026
Jackson	State	Market	Wooden block	2,298
Lake	Wabash avenue	Clark	Wooden block	1,267
Lake	Ashland avenue	Webster avenue	Wooden block	5,343
La Salle	Chicago avenue	Division	Wooden block	2,581
Madison	Center avenue	Robey	Wooden block	5,307
Market	Kinzie	Chicago avenue	Wooden block	2,615
Michigan avenue	Twenty-second	Twenty-ninth	Graveling	3,924
Monroe	Clark	State	Wooden block	758
North avenue	Chicago River	Wells	Wooden block	5,796
Ohio	Clark	Kingsbury	Wooden block	2,331
Park avenue	Ashland avenue	Leavitt	Wooden block	3,953
Polk	Halsted	Chicago River	Wooden block	2,944
Pacific avenue	Jackson	Van Buren	Wooden block	396
Quincy	State	Clark	Wooden block	758
Sangamon	Fulton	Milwaukee avenue	Wooden block	2,140
Sherman	Jackson	Van Buren	Wooden block	396
South Water	Michigan avenue	Central avenue	Wooden block	196
Twelfth	Chicago River	Halsted	Wooden block	3,334
Twelfth	Ashland avenue	Western avenue	Wooden block	4,595
Twenty-fourth	Calumet avenue	South Park avenue	Wooden block	450

IMPROVEMENT OF STREETS FROM 1855 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Twenty-fifth	South Park avenue	Lake Shore	Wooden block	300
Twenty-seventh	Johnson avenue	Cottage Grove avenue	Wooden block	757
Union	Madison	Milwaukee avenue	Wooden block	725
Van Buren	Chicago River	Canal	Wooden block	500
Van Buren	Halsted	Loomis	Wooden block	3,924
Washington	State	Market	Wooden block	2,334
Wells	Division	Clark	Wooden block	4,448
Total number of lineal feet				105,876
Number of miles				19.96
1871.				
Adams	Ashland avenue	Robey	Wooden block	2,606
Calumet avenue	Cottage Grove avenue	Twenty-ninth	Wooden block	2,125
Canalport avenue	Halsted	Morgan	Wooden block	1,448
Chicago avenue	Milwaukee avenue	Chicago River	Wooden block	2,910
Dearborn	Lake	Randolph	Wooden block	378
Depuyster	Desplaines	Halsted	Wooden block	308
Division	Clybourn avenue	Halsted	Wooden block	2,290
Division	North Branch Canal	North Branch River	Wooden block	1,862
Douglas avenue	South Park avenue	Illinois Central Railroad	Wooden block	2,520
Elston avenue	West Clybourn Place	Fullerton avenue	Cindering	4,320
Green	Madison	Fulton	Wooden block	1,514
Green	Madison	Harrison	Wooden block	2,515
Halsted	Milwaukee avenue	Chicago River	Wooden block	2,337
Harrison	Halsted	Center avenue	Wooden block	2,608
Hawthorne avenue	Larrabee	Halsted	Macadamized	2,985
Illinois	State	St. Clair	Wooden block	1,346
Indiana	Clark	Chicago River	Wooden block	2,489
Indiana	Desplaines	North Center avenue	Wooden block	3,698

Indiana	North Center avenue	Noble	Wooden block	1,326
Jackson	Canal	Halsted	Wooden block	2,008
Lake	Chicago River	Clark	Wooden block	1,707
Larrabee	Chicago avenue	Clybourn avenue	Wooden block	3,491
Larrabee	North avenue	Clybourn avenue	Wooden block	1,552
La Salle	South Water	Lake	Wooden block	315
La Salle	Randolph	Lake	Wooden block	378
La Salle	Clark	Division	Wooden block	3,381
Loomis	Madison	Van Buren	Wooden block	1,786
Madison	Robey	Western avenue	Wooden block	2,680
Market	Lake	Randolph	Wooden block	379
Market	Madison	Randolph	Graveled	760
Market	Division	Chicago avenue	Wooden block	2,560
Michigan	Cass	St. Clair	Wooden block	1,098
Michigan avenue	Twenty-ninth	Egan avenue	Graveled	6,500
Michigan avenue	South Water	Chicago River	Wooden block	512
Milwaukee avenue	Elston avenue	Division	Wooden block	3,555
Monroe	Canal	Halsted	Wooden block	2,008
Monroe	Halsted	Aberdeen	Wooden block	1,930
North avenue	Wells	Dearborn	Wooden block	1,535
Ontario	Clark	Dearborn	Wooden block	320
Pearson	Rush	East	Wooden block	750
Pine	Whiting	Chicago avenue	Wooden block	1,044
Prairie avenue	Cottage Grove avenue	Thirtieth	Wooden block	3,845
Quincy	La Salle	Fifth avenue	Wooden block	322
Randolph	Halsted	Union Park	Wooden block	4,363
Sedgwick	Chicago avenue	Division	Wooden block	2,560
Sedgwick	Division	North avenue	Wooden block	2,576
Sheldon	Madison	Randolph	Wooden block	800
Sixteenth	Michigan avenue	State	Wooden block	720
South Park avenue	Twenty-ninth	Douglas avenue	Wooden block	3,947
South-Western avenue	Twelfth	Western city limits	Graveling	11,520
Superior	Pine	St. Clair	Wooden block	300
Taylor	Clark	Fifth avenue	Wooden block	735
Twelfth	Halsted	Center avenue	Wooden block	2,603

IMPROVEMENT OF STREETS FROM 1855 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Twentieth	State	Illinois Central Railroad	Graveling	2,003
Twenty-first	State	Calumet avenue	Wooden block	1,435
Twenty-second	Wentworth avenue	South Branch river	Wooden block	1,964
Twenty-fourth	Wabash avenue	Calumet avenue	Wooden block	1,470
Twenty-sixth	Wabash avenue	South Park avenue	Wooden block	1,848
Twenty-eighth	Wabash avenue	Michigan avenue	Wooden block	404
Twenty-eighth	Wabash avenue	State	Wooden block	386
Washington	Ashland avenue	Leavitt	Wooden block	3,953
Warren avenue	Leavitt	Ashland avenue	Wooden block	3,953
Western avenue	Steele	Illinois and Mich. Canal	Cindering	3,340
Total number of lineal feet				135,326
Number of miles				25.63
1872				
Ashland avenue	Madison	Congress	Macadam	2,400
Calhoun place	La Salle	Clark	Wooden block	322
Chicago avenue	Milwaukee avenue	Ashland avenue	Wooden block	3,120
Clark	Randolph	Washington	Wooden block	381
Clinton	Harrison	Van Buren	Wooden block	796
Franklin	Madison	Monroe	Wooden block	380
River	South Water	Bridge	Wooden block	530
State	Lake	Bridge	Wooden block	400
Sheldon	Lake	Depot place	Wooden block	667
Twenty-third	Calumet avenue	South Park avenue	Wooden block	376
Twenty-third	State	Wabash avenue	Wooden block	250
Total number of lineal feet				9,622
Number of miles				1.82

1873				
Clark	South Water	Harrison	Wooden block	3,915
Dearborn	South Water	Madison	Wooden block	1,529
Elston avenue	Milwaukee avenue	North avenue	Cindering	5,116
Grand avenue	Rockwell	Crawford avenue	Cindering	10,122
Harrison	State	Wabash avenue	Wooden block	861
Kinzie	Wells	Rush	Wooden block	2,287
Lake	Fifth avenue	Michigan avenue	Wooden block	1,891
Lake	Canal	Halsted	Wooden block	2,066
La Salle	Michigan	Chicago avenue	Wooden block	2,258
Madison	State	Wabash avenue	Wooden block	341
Milwaukee avenue	Division	North avenue	Wooden block	4,047
Monroe	State	Wabash avenue	Wooden block	360
Prairie avenue	Thirtieth	Thirty-first	Wooden block	454
Randolph	Clark	Michigan avenue	Wooden block	1,584
River	Dock	South Water	Wooden block	80
South Water	Clark	Michigan avenue	Wooden block	1,584
State	Randolph	Jackson	Wooden block	2,385
Thirty-first	South Park avenue	State	Wooden block	2,587
Twenty-fifth	State	Wabash avenue	Wooden block	383
Twenty-ninth	Calumet avenue	Cottage Grove avenue	Wooden block	1,087
Vernon avenue	Twenty-ninth	Thirtieth	Wooden block	808
Wabash avenue	South Water	Congress	Wooden block	4,050
Wabash avenue	Twenty-ninth	Douglas avenue	Wooden block	3,919
Washington	State	Michigan	Wooden block	710
Total number of lineal feet				53,824
Number of miles				10.19
1874				
Blue Island avenue	Twelfth	Fifteenth	Wooden block	2,384
Carpenter	Madison	Washington	Wooden block	415
Cottage Grove avenue	Twenty-second	Thirtieth	Wooden block	5,326
Dearborn	Twenty-seventh	Thirty-third	Wooden block	3,402
Fifth avenue	Randolph	Madison	Wooden block	867
Foster	Polk	Harrison	Wooden block	798

IMPROVEMENT OF STREETS FROM 1855 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Twentieth	State	Illinois Central Railroad	Graveling	2,003
Twenty-first	State	Calumet avenue	Wooden block	1,435
Twenty-second	Wentworth avenue	South Branch river	Wooden block	1,964
Twenty-fourth	Wabash avenue	Calumet avenue	Wooden block	1,470
Twenty-sixth	Wabash avenue	South Park avenue	Wooden block	1,848
Twenty-eighth	Wabash avenue	Michigan avenue	Wooden block	404
Twenty-eighth	Wabash avenue	State	Wooden block	386
Washington	Ashland avenue	Leavitt	Wooden block	3,953
Warren avenue	Leavitt	Ashland avenue	Wooden block	3,953
Western avenue	Steele	Illinois and Mich. Canal	Cindering	3,340
Total number of lineal feet				135,326
Number of miles				25.63
1872				
Ashland avenue	Madison	Congress	Macadam	2,400
Calhoun place	La Salle	Clark	Wooden block	322
Chicago avenue	Milwaukee avenue	Ashland avenue	Wooden block	3,120
Clark	Randolph	Washington	Wooden block	381
Clinton	Harrison	Van Buren	Wooden block	796
Franklin	Madison	Monroe	Wooden block	380
River	South Water	Bridge	Wooden block	530
State	Lake	Bridge	Wooden block	400
Sheldon	Lake	Depot place	Wooden block	667
Twenty-third	Calumet avenue	South Park avenue	Wooden block	376
Twenty-third	State	Wabash avenue	Wooden block	250
Total number of lineal feet				9,622
Number of miles				1.82

1873				
Clark	South Water	Harrison	Wooden block	3,915
Dearborn	South Water	Madison	Wooden block	1,529
Elston avenue	Milwaukee avenue	North avenue	Cindering	5,116
Grand avenue	Rockwell	Crawford avenue	Cindering	10,122
Harrison	State	Wabash avenue	Wooden block	361
Kinzie	Wells	Rush	Wooden block	2,287
Lake	Fifth avenue	Michigan avenue	Wooden block	1,891
Lake	Canal	Halsted	Wooden block	2,066
La Salle	Michigan	Chicago avenue	Wooden block	2,258
Madison	State	Wabash avenue	Wooden block	341
Milwaukee avenue	Division	North avenue	Wooden block	4,047
Monroe	State	Wabash avenue	Wooden block	360
Prairie avenue	Thirtieth	Thirty-first	Wooden block	454
Randolph	Clark	Michigan avenue	Wooden block	1,584
River	Dock	South Water	Wooden block	80
South Water	Clark	Michigan avenue	Wooden block	1,584
State	Randolph	Jackson	Wooden block	2,385
Thirty-first	South Park avenue	State	Wooden block	2,587
Twenty-fifth	State	Wabash avenue	Wooden block	383
Twenty-ninth	Calumet avenue	Cottage Grove avenue	Wooden block	1,087
Vernon avenue	Twenty-ninth	Thirtieth	Wooden block	808
Wabash avenue	South Water	Congress	Wooden block	4,050
Wabash avenue	Twenty-ninth	Douglas avenue	Wooden block	3,919
Washington	State	Michigan	Wooden block	710
Total number of lineal feet				53,824
Number of miles				10.19
1874				
Blue Island avenue	Twelfth	Fifteenth	Wooden block	2,384
Carpenter	Madison	Washington	Wooden block	415
Cottage Grove avenue	Twenty-second	Thirtieth	Wooden block	5,326
Dearborn	Twenty-seventh	Thirty-third	Wooden block	3,402
Fifth avenue	Randolph	Madison	Wooden block	867
Foster	Polk	Harrison	Wooden block	798

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Franklin	Chicago avenue	Division	Wooden block	2,560
Fulton	Ada	Robey	Wooden block	4,324
Indiana	Noble	Hoyne	Wooden block	4,581
Indiana avenue	Thirty-first	Douglas avenue	Wooden block	2,529
Jackson	State	Michigan avenue	Wooden block	721
Jefferson	Van Buren	Harrison	Wooden block	795
Lake avenue	Douglas	Oakwood	Wooden block	2,850
Langley avenue	Thirty-seventh	Thirty-eighth	Wooden block	575
Monroe	Ashland avenue	Robey	Wooden block	2,609
Newberry avenue	Taylor	Twelfth	Wooden block	811
Oak	Clark	Dearborn	Wooden block	817
Park avenue	Leavitt	Western avenue	Wooden block	1,834
Pearce	Halsted	Desplaines	Wooden block	809
Peoria	Harrison	Fulton	Wooden block	8,965
Price Place	Halsted	Desplaines	Wooden block	809
Sangamon	Harrison	Van Buren	Wooden block	755
Silver	Harrison	Gurley	Wooden block	418
Twenty-ninth	Calumet avenue	State	Wooden block	1,992
Van Buren	Ashland avenue	Paulina	Wooden block	596
Vincennes avenue	Douglas avenue	Thirty-seventh	Wooden block	1,856
Total number of lineal feet				47,870
Number of miles				9.07
1875				
Bryant avenue	Vincennes avenue	Stanton avenue	Wooden block	890
Butterfield	Twenty-seventh	Twenty-ninth	Wooden block	818
Butterfield	Twenty-ninth	Thirty-first	Wooden block	1,848
Clark	Harrison	Polk	Wooden block	900
Chicago avenue	Ashland avenue	Wood	Wooden block	1,895
Cornell	Milwaukee avenue	Ashland avenue	Wooden block	2,421

Cottage place	Thirty-first	330 feet north	Wooden block	330
Dearborn avenue	Indiana avenue	North avenue	Wooden block	8,124
Eagle	Desplaines	Halsted	Wooden block	789
Fifth avenue	Randolph	South Water	Wooden block	855
Fourteenth	State	Clark	Wooden block	755
Granger	Wells	Sedgwick	Wooden block	980
Halsted	Twenty-second	River	Wooden block	1,050
Harrison	Wabash avenue	Michigan avenue	Wooden block	872
Hubbard	Ashland avenue	Hoyne avenue	Wooden block	3,288
Jefferson	Twelfth	Meagher	Wooden block	2,155
Jefferson	Harrison	Twelfth	Wooden block	2,477
Lake	Michigan avenue	Central avenue	Wooden block	204
Langley avenue	Thirty-eighth	Egan avenne	Wooden block	605
Loomis	Van Buren	238 feet south	Wooden block	238
Madison	Western avenue	Rockwell	Wooden block	1,878
Madison	Clark	Chicago River	Wooden block	1,821
Market	Madison	Adams	Wooden block	874
Meridian	Desplaines	Halsted	Wooden block	740
Michigan	State	Cass	Wooden block	462
Monroe	Market	Franklin	Wooden block	402
Ohio	Union	Green	Wooden block	737
Sheldon	Carroll avenue	Arbor place	Wooden block	278
State	Michigan	100 feet south	Wooden block	100
Taylor	Blue Island avenue	Throop	Wooden block	2,175
Thirty-first	Cottage Grove avenue	Lake Park avenue	Wooden block	566
Thirty-seventh	Vincennes avenue	Cottage Grove avenue	Wooden block	755
Townsend	Chicago avenue	Oak	Wooden block	1,520
Twelfth	Center avenue	Ashland avenue	Wooden block	2,674
Union	Milwaukee avenue	Ohio	Wooden block	725
Vincennes avenue	Thirty-seventh	Egan avenue	Wooden block	1,811
Wabash avenue	Lot 8, block 2	Ft. Dearborn addition	Wooden block	48
Wabash avenue	Congress	Thirteenth	Wooden block	3,624
Wabash avenue	Thirteenth	Twenty-second	Wooden block	4,609
Washington	Franklin	Market	Wooden block	354
Wells	Viaduct	Division	Wooden block	5,588
Total number of lineal feet				60,670
Number of miles				11.29

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
1876				
Archer avenue	Halsted	South Branch	Wooden block	5,603
Blue Island avenue	Fifteenth	Twenty-first	Wooden block	3,086
Calumet avenue	Twenty-ninth	Thirty-first	Wooden block	1,262
Chicago avenue	Clark	North Branch	Wooden block	3,309
Clinton	Fulton	Randolph	Wooden block	716
Couch Place	La Salle	80 feet west of Clark	Wooden block	244
Dearborn avenue	Illinois	Indiana	Wooden block	219
Eighteenth	Canalport avenue	Union	Wooden block	1,331
Fourteenth	Jefferson	Blue Island avenue	Wooden block	3,830
Franklin	Adams	Monroe	Wooden block	397
South half Fulton	Clinton	Alley west	Wooden block	150
Fulton	Ada	Sangamon	Wooden block	2,601
Haddock place	La Salle	Fifth avenue	Wooden block	322
*Halsted	Harrison	Twenty-second	Wooden block	7,727
Illinois	Wells	Market	Wooden block	723
Indiana avenue	Twenty-third	Twenty-ninth	Wooden block	2,788
Kinzie	Wells	North Branch	Wooden block	1,311
Lake	Western avenue	Railroad track	Wooden block	1,383
Larrabee	North avenue	Center	Wooden block	2,554
Madison	Dearborn	State	Wooden block	366
Marble Place	Desplaines	Halsted	Wooden block	808
South half Monroe	Franklin	East	Wooden block	94
†Monroe	Franklin	Fifth avenue	Wooden block	337
Pacific avenue	Harrison	Polk	Medina Stone	795
Polk	Halsted	Center avenue	Wooden block	2,478
Sedgwick	North avenue	Center	Wooden block	2,554
South Water	Clark	Fifth avenue	Wooden block	725
South Water	Central avenue	203 feet east	Wooden block	203

State	Jackson	100 feet north of Harrison	Wooden block	3,110
Townsend	Oak	Elm	Wooden block	818
Twenty-second	State	La Salle	Wooden block	981
Washington	Leavitt	Railroad track	Wooden block	2,645
Total number of lineal feet				55,465
Number of miles				10.50
1877.				
Canal	Canalport avenue	Wright	Wooden block	1,297
Canal	Harrison	Wright	Wooden block	4,418
*Canalport avenue	Halsted	Canal	Wooden block	2,400
Clark	Webster avenue	South	Wooden block	1,217
Clark	Webster avenue	Fullerton avenue	Wooden block	1,463
Couch place	Franklin	Fifth avenue	Wooden block	322
Couch place	Fifth avenue	La Salle	Wooden block	336
Dearborn place	Washington	Randolph	Wooden block	419
Fourteenth	Stewart avenue	Jefferson	Wooden block	1,290
Halsted	Archer avenue	198 feet south 38th court	Wooden block	5,969
Halsted	Division	Fullerton avenue	Wooden block	7,925
Halsted	Division	North branch	Wooden block	1,900
Harrison	Clinton	Canal	Wooden block	304
Jackson	Clark	Fifth avenue	Wooden block	758
Kinzie	Canal	Jefferson	Wooden block	791
Lake	Viaduct	Canal	Wooden block	246
Madison	Wabash avenue	Alley east	Wooden block	190
Monroe	Wabash avenue	Alley east	Wooden block	198
Morgan	Harrison	Twelfth	Wooden block	2,815
Morgan	Lake	Randolph	Wooden block	382
Pacific avenue	Harrison	Van Buren	Wooden block	885
Pine	Michigan	Railroad track	Wooden block	138

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* Fourteen feet in center.

† Except west ninety-four feet.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Pine	Huron	Chicago avenue	Wooden block	668
Polk	Ogden avenue	Campbell avenue	Macadam 24 feet wide	2,682
Rucker	Chicago avenue	Milwaukee avenue	Wooden block	413
Rush	Chicago avenue	Cedar	Wooden block	2,111
Rush	Water	Alley north of Illinois	Wooden block	613
Sixteenth	Michigan avenue	Indiana avenue	Wooden block	407
Sixteenth	Indiana avenue	Prairie avenue	Wooden block	440
State	Kinzie	Chicago avenue	Wooden block	2,448
Townsend	Elm	Division	Wooden block	322
Twelfth	Chicago River	Holden avenue	Wooden block	440
*Twelfth	Canal	Ashland avenue	Wooden block	7,324
†Twenty-second	Center avenue	Ashland avenue	Wooden block	2,602
University place	Rhodes avenue	Cottage Grove avenue	Wooden block	749
Vernon avenue	Twenty-ninth	Northern terminus	Wooden block	192
‡Wabash avenue	Congress	Twenty-second	Wooden block	1,432
West Water	Kinzie	Cook	Wooden block	393
Wells	Division	Clark	Wooden block	4,493
Total number of lineal feet				64,892
Number of miles				12.29
1878.				
Adams	Hoyne avenue	Irving avenue	Cedar blocks	1,024
Arcade court	La Salle	154 feet east	Cedar blocks	154
Arbor place	Sheldon	Union Park place	Cedar blocks	174
Calhoun place	La Salle	240 feet west	Cedar blocks	240
Canal	Harrison	Lake	Cedar blocks	3,966
Center	Racine avenue	163 feet east	Cedar blocks	163
‖Chicago avenue	Wood	Grand avenue	Macadam	7,584
Clark	Polk	Twelfth	Cedar blocks	1,690

Couch place	Clark	Dearborn	Cedar blocks	322
Dearborn	Madison	Monroe	Cedar blocks	400
Eighteenth	Wabash avenue	Indiana avenue	Cedar blocks	724
Eighteenth	State	Grove	Cedar blocks	1,693
Fifth avenue	Madison	Monroe	Pine blocks	465
Halsted	130 feet north of Twenty-seventh street	Thirty-first	Cedar blocks	2,484
Halsted	Chicago River	Archer avenue	Cedar blocks	627
Halsted	Clybourn avenue	Sophia	Cedar blocks	3,603
Halsted	Division	Chicago River	Cindering	1,622
Halsted	Randolph	Madison	Cedar blocks	991
Hoyne avenue	Madison	Congress	Cedar blocks	2,318
La Salle	Monroe	Washington	Cedar blocks	856
La Salle	Washington	Randolph	Pine blocks	380
La Salle	Kinzie	North Water	Pine blocks	204
Lincoln avenue	Wells	Center	Pine blocks	1,457
Madison	Clark	Dearborn	Cedar blocks	386
Madison	Halsted	Canal	Cedar blocks	2,548
Madison	Canal	Viaduct	Cedar blocks	138
Market	Washington	Randolph	Cedar blocks	459
Michigan	Clark	Wells	Cedar blocks	673
Milwaukee avenue	Lake	Fulton	Cedar blocks	482
Monroe	State	Clark	Pine blocks	754
Monroe	Clark	Fifth avenue	Cedar blocks	759
Pacific avenue	Polk	Taylor	Medina stone	834
Prairie avenue	Cottage Grove avenue	Thirtieth	Hemlock blocks	3,635
Racine avenue	Center	Kroger	Cedar blocks	100
Randolph	Clark	Chicago River	Cedar blocks	1,717
Randolph	Desplaines	Clinton	Cedar blocks	732
School	Desplaines	404 feet west	Pine blocks	404
State	Kinzie	63 feet north	Cedar blocks	63
Thirty-first	South Park avenue	100 feet west	Pine blocks	100
Thirty-first	State	Clark	Cedar blocks	706
Twenty-seventh	Johnson avenue	Cottage Grove avenue	Hemlock blocks	600

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* Sixteen feet in center.

† Twenty feet in center.

‡ In front of sundry lots.

‖ Center of roadway 24 feet wide.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Wabash avenue	Twenty-fifth	Thirty-first	Hemlock blocks	3,484
Washington	Dearborn	State	Pine blocks	332
Washington	Clark	Dearborn	Cedar blocks	401
Washington	Fifth avenue	Franklin	Cedar blocks	337
Washington	La Salle	Clark	Pine blocks	320
South side Washington	Canal	Alley west	Cedar blocks	150
South Water	Fifth avenue	Lake	Pine blocks	945
Wentworth avenue	Twenty-second	Twenty-ninth	Cedar blocks	3,957
Total number of lineal feet				58,157
Number of miles				11.01
1879.				
Adams	State	Chicago River	Cedar blocks	2,519
Adams	Irving place	Oakley avenue	Shaw's Patent	402
*Ashland avenue	Twenty-second	Chicago River	Planking	1,043
Bremer	Chicago avenue	Oak	Cedar blocks	1,368
Calhoun place	La Salle	110 feet east	Cedar blocks	110
Central avenue	Randolph	South Water	Nicholson	765
Desplaines	Monroe	Fulton	Cedar blocks	2,205
Eighteenth	Union	Halsted	Cedar blocks	439
Eighteenth	Canal	Viaduct	Cedar blocks	365
Fourteenth	Center	Ashland avenue	Cinders	2,642
Franklin	Madison	Lake	Cedar blocks	1,238
Halsted	Sophia	Fullerton avenue	Cedar blocks	1,990
Halsted	Division	Clybourn avenue	Cedar blocks	2,231
Halsted	Ohio	Chicago avenue	Cedar blocks	1,489
Halsted	Fifteenth	Viaduct	Cedar blocks	400
Hoyne avenue	Congress	Harrison	Cedar blocks	270
Lake	La Salle	Fifth avenue	Cedar blocks	323
Lake	Fifth avenue	Market	Cedar blocks	633

Lake	La Salle	State	Nicholson	1,206
La Salle	Randolph	Lake	Cedar blocks	381
La Salle	Monroe	Adams	Cedar blocks	397
†Madison	Dearborn	Michigan avenue	Cedar blocks	190
East half Market	Madison	209 feet north	Cobblestone	209
West half Market	Madison	201 feet north	Cedar blocks	201
Michigan	Wells	Kingsbury	Cedar blocks	1,166
Michigan	State	40 ft. east of Dearborn ave.	Cedar blocks	364
Polk	State	Chicago River	Cedar blocks	1,597
Sherman	Van Buren	Polk	Medina stone	1,696
Taylor	State	Clark	Nicholson	746
Twenty-fifth	Calumet avenue	Prairie avenue	Cedar blocks	455
Twenty-second	La Salle	Wentworth avenue	Cedar blocks	222
‡Twenty-second	Center avenue	Morgan	Planking	1,124
Van Buren	Wabash avenue	Chicago River	Cedar blocks	2,715
Wabash avenue	Twenty-second	Twenty-third	Cedar blocks	598
Warren avenue	Leavitt	Oakley avenue	Macadam	665
Washington	La Salle	Fifth avenue	Pine blocks	324
Wells	Granger	Menomonee	Cedar blocks	1,410
Total number of lineal feet				36,098
Number of miles				6.83
1880				
Adams	Halsted	Canal	Cedar block	2,002
Calumet avenue	Twenty-first	Twenty-third	Cedar block	1,024
Calumet avenue	Thirty-first	Thirty third	Macadam	2,598
Canalport avenue	Halsted	Twenty-second	Cedar block	1,391
Center avenue	Twenty second	Southern terminus	3-inch white oak plank	1,035
Clark	Twelfth	Twenty-second	Cedar block	4,511
Clark	500 feet south of Twelfth	1,000 feet south of 14th	Cedar block	1,648
Clinton	Madison	Carroll avenue	Cedar block	1,780
Congress	State	Michigan avenue	Cedar block	697
Desplaines	Monroe	Harrison	Cedar block	2,184
Division	Milwaukee avenue	Chicago River	Cedar block	2,299

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* Planking 16 feet in center. † Planking 24 feet wide in center. ‡ Sundry lots.

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Division	Clark	Lake shore drive	Cedar block	1,222
Elizabeth	Lake	Indiana	Cedar block	1,706
Elizabeth	Lake	Madison	Macadam	1,178
Erie	Clark	St. Clair	Cedar block	1,412
Fifth avenue	Monroe	Van Buren	Cedar block	1,257
Ex. 220x16 feet	Northwest corner Adams	Northward	Granite	220
Fifth avenue	Van Buren	Taylor	Cedar block	2,388
Franklin	Adams	Harrison	Cedar block	1,658
Fulton	Clinton	Union	Cedar block	1,020
Halsted	Madison	Harrison	Cedar block	2,712
Halsted	Indiana	Ohio	Cedar block	336
Harrison	State	Pacific avenue	Cedar block	959
Harrison	Sherman	Franklin	Cedar block	887
Honore	Madison	Adams	Macadam	792
Hoyne	Washington	Warren avenue	Cedar block	273
Jackson	State	Dearborn	Cedar block	364
Jackson	Fifth avenue	Market	Cedar block	649
Jackson	Halsted	Hoyne avenue	Macadam	8,584
Jackson	Canal	Halsted	Cedar block	1,904
Jefferson	Madison	Carroll avenue	Cedar block	1,878
La Salle	Van Buren	Quincy	Medina stone	626
Larrabee	Center	Webster avenue	Cedar block	1,257
Lincoln avenue	Center	Belden avenue	Cedar block	2,674
Lincoln	Adams	Jackson	Cedar block	398
Madison	Ashland avenue	Sangamon	Cedar block	4,333
Market	Adams	Van Buren	Cedar block	861
West ½ of 440 feet of East ½ Market	Calhoun place	Washington	Granite	190
Michigan avenue	River	Jackson	Cedar block	3,540
Milton avenue	Oak	Division	Cedar block	1,201

Monroe	Oakley avenue	Robey	Shaw's patent	1,752
Monroe	Ashland avenue	Loomis	Cedar block	1,214
North avenue	Wells	Chicago River	Cedar block	5,849
Ohio	Clark	St. Clair	Cedar block	2,092
Ontario	Clark	St. Clair	Cedar block	2,092
Randolph	Wabash avenue	Michigan avenue	Cedar block	370
River	Wabash avenue	250 feet northeast of Michigan avenue	Cedar block	370
Rush	Illinois	Ohio	Cedar block	410
Sheldon	Madison	Randolph	Cedar block	793
Sherman	Jackson	Van Buren	Cedar block	399
State	Kinzie	Viaduct	Cedar block	211
Taylor	Clark	Fifth avenue	Cedar block	785
Twentieth	State	Calumet avenue	Gravel	1,785
Van Buren	Wabash avenue	Michigan avenue	Cedar block	361
South Water	Michigan avenue	Central avenue	Cedar block	149
Washington	Franklin	Market	Cedar block	330
Washington	Halsted	Clinton	Cedar block	1,602
Wood	Van Buren	Harrison	Cedar block	720
Total number of lineal feet				88,922
Number of miles				16.84
1881.				
Adams	State	Michigan avenue	Cedar blocks	700
Ashland avenue	Congress	Twelfth	Macadam	3,369
Bryan place	Randolph	Lake	Cedar blocks	600
Calhoun place	Dearborn	120 feet east	Medina stone	120
Calumet avenue	Eighteenth	Twentieth	Macadam	1,667
Cass	Ontario	Erie	Cedar blocks	218
Chicago avenue	Clark	Pine	Cedar blocks	1,773
East half Clinton	Adams	Alley north	Cedar blocks	189
Clybourn avenue	North avenue	Fullerton avenue	Cedar blocks	7,880
Court place	Franklin	Market	Medina stone	322
East half Dearborn	Adams	Jackson	Medina stone	397
Division	Astor	Lake shore drive	Cedar blocks	484
Douglas avenue	South Park avenue	Lake avenue	Cedar blocks	2,346

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Egan avenue	Cottage Grove avenue	Lake avenue	Cedar blocks	838
Eighteenth	Indiana avenue	Calumet avenue	Macadam	676
Eldridge court	State	Michigan avenue	Macadam	718
Ellis avenue	Douglas avenue	Egan avenue	Macadam	2,709
Erie	Clark	Dearborn avenue	Cedar blocks	319
Erie	Rush	Pine	Cedar blocks	300
Eugenie	Wells	Clark	Cedar blocks	426
Fourteenth	State	Indiana avenue	Macadam	1,068
Fourth avenue	Jackson	Twelfth	Cedar blocks	3,625
Franklin	Lake	South Water	Medina stone	284
Fulton	Union	Sangamon	Cedar blocks	1,358
Fulton	Canal	Clinton	Cedar blocks	318
Goethe	La Salle	Wells	Cedar blocks	169
Groveland avenue	Twenty-ninth	Thirtieth	Cedar blocks	317
Harrison	Center avenue	Clinton	Cedar blocks	4,584
Harrison	Center avenue	Ashland avenue	Macadam	2,605
Indiana	Halsted	Viaduct	Cedar blocks	979
Indiana avenue	Eighteenth	Fourteenth	Macadam	2,196
South half Jackson	Dearborn	Clark	Cedar blocks	328
Jackson	Hoyne avenue	Rockwell	Macadam	3,544
Kinzie	Clark	La Salle	Cedar blocks	320
Lake	State	Michigan avenue	Cedar blocks	712
Lake avenue	Douglas avenue	Oakwood avenue	Cedar blocks	2,784
Lake	Canal	Ashland avenue	Cedar blocks	7,852
La Salle avenue	Chicago avenue	Clark	Cedar blocks	5,990
La Salle	Quincy	Adams	Medina stone	182
La Salle	Lake	South Water	Medina stone	875
Lincoln avenue	Belden avenue	Fullerton avenue	Cedar blocks	951
Lincoln	Indiana	Adams	Macadam	3,951
Loomis	Madison	Van Buren	Cedar blocks	1,922

Madison	Sangamon	Halsted	Cedar blocks	985
Madison	Hamlin avenue	Homan avenue	Macadam	2,644
Maple	Clark	Dearborn	Cedar blocks	150
Market	Van Buren	Congress	Cedar blocks	306
Michigan	Cass	St. Clair	Cedar blocks	967
Monroe	Michigan avenue	Alley west	Cedar blocks	190
Pine	Michigan	Huron	Cedar blocks	1,456
Prairie avenue	Thirty-first	Thirty-third	Macadam	1,264
Quincy	Franklin	Market	Cedar blocks	324
Quincy	Clark	La Salle	Medina stone	338
North half Randolph	Michigan avenue	181 feet east	Cedar blocks	181
Randolph	Halsted	Desplaines	Cedar blocks	754
Rhodes avenue	Douglas avenue	University Place	Cedar blocks	341
Robey	Lake	Harrison	Macadam	3,895
South Park avenue	Twenty-second	Douglas avenue	Cedar blocks	7,937
State	Taylor	Egan avenue	Cedar blocks	16,677
Third avenue	Jackson	Twelfth	Cedar blocks	3,625
Thirty-first	State	South Park avenue	Cedar blocks	2,479
1881				
Twelfth	Wabash avenue	Clark	Medina stone	1,079
Twentieth	State	Archer avenue	Cedar blocks	548
Twenty-eighth	Michigan avenue	Wabash avenue	Asphalt blocks	390
Twenty-fifth	South Park avenue	300 feet east	Cedar blocks	300
Van Buren	Halsted	Canal	Cedar blocks	2,107
Warren avenue	Oakley avenue	Rockwell	Macadam	2,120
Washington	Clinton	West Water	Cedar blocks	544
Washington	Wabash avenue	Michigan avenue	Cedar blocks	365
Wentworth	Twenty-ninth	Thirty-third	Cedar blocks	2,655
Wood	Lake	Van Buren	Cedar blocks	2,971
Total number of lineal feet				129,462
Number of miles				24.52
1882				
Ada	Washington	Madison	Cedar blocks	420
Ann	Washington	Madison	Cedar blocks	420

IMPROVEMENT OF STREETS FROM 1855 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Ashland avenue	Lake	Chicago avenue	Macadam	3,878
Benton Place	110 feet east of Wabash av	State	Medina stone	231
Bishop Court	Madison	Washington	Cedar blocks	420
Calhoun Place	Clark	110 feet east of La Salle	Asphalt blocks	220
Calhoun Place	Fifth avenue	Franklin	Medina stone	324
California avenue	Madison	Twelfth	Macadam 20 feet wide	5,284
Calumet avenue	Twentieth	Twenty-first	Macadam	373
Calumet avenue	Twenty-third	Twenty-ninth	Cedar blocks	3,336
East half Canal	Lake	Fulton	Medina stone	275
Carpenter	Milwaukee avenue	George	Cedar blocks	1,170
Cass	Kinzie	North terminus	Cedar blocks	2,543
Center	Clark	Sedgwick	Cedar blocks	615
Center avenue	Hubbard	Chicago avenue	Cedar blocks	2,110
Center avenue	Madison	Van Buren	Cedar blocks	1,700
Center avenue	Taylor	Twelfth	Cedar blocks	800
Center avenue	Blue Island avenue	Twenty-second	Cedar blocks	3,875
Clark	Chicago avenue	Division	Cedar blocks	2,566
West half Clark	North avenue	North Park avenue	Cedar blocks	3,037
Clybourn avenue	Division	North avenue	Cedar blocks	3,413
Congress	Loomis	Ogden avenue	Cedar blocks	3,030
Court place	Fifth avenue	Franklin	Medina stone	324
Dearborn place	Lake	Haddock place	Medina stone	170
Division	Clybourn avenue	Sedgwick	Cedar blocks	420
Ellsworth	Mather	Sebor	Medina stone	235
Erie	Clark	Chicago River	Cedar blocks	3,080
Eugenie	Wells	Sedgwick	Cedar blocks	998
Forest avenue	Thirty-first	Douglas avenue	Macadam	2,610
Franklin	Illinois	Ontario	Cedar blocks	802
Haddock place	Fifth avenue	Franklin	Medina stone	323
Haddock place	Wabash avenue	East terminus	Medina stone	216
Harrison	Ashland avenue	Ogden avenue	Macadam	2,090

Hoyne avenue	Madison	Indiana	Cedar blocks	2,990
Indiana avenue	Twenty-ninth	Thirtieth	Asphalt blocks	810
Indiana	Clark	Chicago River	Cedar blocks	2,429
Jackson	Rockwell	Sacramento avenue	Macadam	2,690
Jefferson	Madison	Van Buren	Cedar blocks	1,676
Kinzie	La Salle	Chicago River	Medina stone	1,694
Lake Park avenue	Thirty-first	Thirty-third	Cedar blocks	1,386
Lincoln	Chicago avenue	Indiana	Macadam	1,760
Lincoln	Jackson	Ogden avenue	Cedar blocks	900
Loomis	125 feet north of Congress	Twelfth	Cedar blocks	3,070
Market	Kinzie	Division	Cedar blocks	5,182
May	Madison	Fulton	Cedar blocks	1,519
Mather	Chic., Burling'n & Quincy R. R. track	Ellsworth	Medina stone	317
Michigan	State	Cass	Cedar blocks	800
Michigan	Clark	40 feet east of Dearborn ave	Cedar blocks	439
Monroe	State	Wabash avenue	Granite blocks	374
Monroe	Market	Chicago River	Medina stone	276
Monroe	Canal	Halsted	Cedar blocks	1,924
Monroe	Western avenue	Potwin's subdivision	Macadam	388
Morgan	Harrison	Washington	Cedar blocks	2,841
Nineteenth	Halsted	Center avenue	Cedar blocks	2,640
North avenue	Wells	Clark	Cedar blocks	650
North Park avenue	Center	Menomonee	Sheet asphalt	1,141
Oakley avenue	Lake	Kinzie	Macadam	1,390
Park avenue	Ashland avenue	Leavitt	Cedar blocks	3,950
Polk	Halsted	Clinton	Cedar blocks	1,710
Sangamon	Monroe	Milwaukee avenue	Cedar blocks	3,085
School	East line block 1 S S	West terminus	Cedar blocks	204
Sebor	Ellsworth	C. B. & Q. R. R. track	Medina stone	317
Sixteenth	Clark	State	Medina stone	735
Superior	Wells	Pine	Cedar blocks	2,183
Taylor	Canal	Blue Island avenue	Cedar blocks	3,085
Thirteenth	State	Indiana avenue	Cedar blocks	979
Thirty-first	Halsted	L. S. & M. S. R. R. track	Cedar blocks	4,376
Thirty-first	South Park avenue	Cottage Grove avenue	Macadam	900

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Thirty-seventh	Cottage Grove avenue	East terminus	Macadam	631
Thirty third	Cottage Grove avenue	East terminus	Cedar blocks	608
Twelfth	Wabash avenue	Michigan avenue	Cedar blocks	362
Twenty-fifth	South Park avenue	Cottage Grove avenue	Cedar blocks	255
Twenty-first	Michigan avenue	Calumet avenue	Macadam	1,091
Twenty-fourth	State	South Park avenue	Cedar blocks	2,200
Twenty-second	Indiana avenue	East terminus	Cedar blocks	1,288
Twenty-sixth	Halsted	Wentworth avenue	Cedar blocks	3,912
Union	Madison	Carroll avenue	Cedar blocks	1,895
Union Park place	Lake	Arbor place	Macadam	978
Wabash avenue	Twenty-third	150 feet south of Thirty-first	Asphalt blocks	4,750
Waldo	Desplaines	Halsted	Cedar blocks	820
Wesson	Chicago avenue	Oak	Cedar blocks	1,365
Total number of lineal feet				131,773
Number of miles				24.95
1883.				
Alley between Clark and Dearborn	Michigan	Illinois	Cedar blocks	218.00
Alley between Kinzie and Michigan	State	La Salle	Cedar blocks	996.00
Alley between State and Third avenue	Harrison	Taylor	Cedar blocks	1,590.00
Alley between State and Wabash avenue	Fourteenth	Sixteenth	Cedar blocks	1,350.00
Alley between Michigan and Indiana aves.	Eighteenth	Twentieth	Asphalt blocks	803.00
Alley between State and Third avenue	Van Buren	Harrison	Medina stone	800.00
Alley between Michigan and Wabash aves.	Jackson	Madison	Medina stone	1,188.00
Alley between State and Wabash avenue	Thirteenth	Eldridge court	Medina stone	1,775.00
*Alley between Washington and Madison	State	Westward	Granite blocks	116.00
Alley between Halsted and Green	Van Buren	Congress	Planking	364.80
Alley between Depuyster and Harrison	Halsted	Desplaines	Planking	809.00
*Alley between Randolph and Lake	Jefferson	Desplaines	Cedar blocks	320.00
Adams	Oakley avenue	Western avenue	Cedar blocks	600.00

Adams	Halsted	Hoyne avenue	Cedar blocks	8,272.00
Ashland avenue	Chicago avenue	Milwaukee avenue	Macadam	2,715.50
Ashland avenue	Madison	Lake	Cedar blocks	1,280.00
Ann	Randolph	Washington	Cedar blocks	375.00
*Bissell	Garfield avenue	Webster avenue	Cedar blocks	455.00
†Bryant avenue	Vincennes avenue	Stanton	Macadam	
Bunker	Canal	Halsted	Curbing	1,985.00
Center avenue	Van Buren	Taylor	Cedar blocks	2,454.00
Center avenue	Twelfth	Blue Island avenue	Cedar blocks	1,154.00
Couch place	Franklin	Westward	Cedar blocks	182.00
Calumet avenue	Twenty-ninth	Thirty-first	Cedar blocks	1,263.58
Curtis	Madison	Fulton	Cedar blocks	1,600.00
Carroll avenue	Ada	Ashland avenue	Cedar blocks	1,597.00
†Congress	Hoyne avenue	Leavitt		
DeKoven	Canal	Jefferson	Cedar blocks	565.30
Dearborn	Adams	Monroe	Granite blocks	397.72
Division	Clybourn avenue	Bridge	Cedar blocks	2,517.50
Elston avenue	Division	Armitage avenue	Cedar blocks	5,653.00
*Elm	Rush	Lake Shore Drive	Cedar blocks	960.00
North Franklin	Kinzie	Illinois	Cedar blocks	441.00
Groveland Park avenue	Thirty-first	Thirty-third	Cedar blocks	1,340.00
Goethe	State	Lake Shore Drive	Curbing	851.50
Hanover	Archer avenue	Twenty-ninth	Cedar blocks	3,261.29
Harmon court	Michigan avenue	State	Cedar blocks	697.20
Haddock place	State	Wabash avenue	Medina stone	343.20
Haddock place	State	Fifth avenue	Medina stone	1,292.50
Haddock place	Sundry lots		Medina stone	24.00
Huron	Clark	State	Cedar blocks	678.00
Indiana	Clark	St. Clair	Cedar blocks	1,880.00
Indiana	Hoyne avenue	Western avenue	Cedar blocks	2,012.00
Johnson	Taylor	Twelfth	Cedar blocks	810.00
Johnson place	Thirty-eighth	Egan avenue	Macadam	612.40
Lane place	Center	Garfield avenue	Cedar blocks	600.00
Locust	Wells	La Salle	Cedar blocks	323.00

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* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Marble place	La Salle	Fifth avenue	Macadam	322.18
Madison	State	Wabash avenue	Granite blocks	339.21
Marshfield avenue	Jackson	Harrison	Macadam	1,049.00
Maxwell	Canal	Halsted	Cedar blocks	3,192.00
Monroe	Halsted	Throop	Cedar blocks	1,965.00
Noble	Indiana	Milwaukee avenue	Cedar blocks	3,405.00
Noble	Milwaukee avenue	North avenue	Cedar blocks	3,268.50
North avenue	Milwaukee avenue	Western avenue		
Oakley avenue	Madison	Lake	Macadam	1,008.00
Oakley avenue	Adams	Northward	Cedar blocks	247.40
*Oakley avenue	Monroe	Southward	Macadam	151.30
Oak avenue	Vincennes avenue	Stanton	Sheet asphalt	818.90
Ohio	Clark	Market	Cedar blocks	1,299.00
*Oak	Wells	Clark	Cedar blocks	655.00
O'Brien	Jefferson	Halsted	Cedar blocks	1,230.00
*Pine	Huron	Superior	Cedar blocks	436.00
Prairie avenue	Twenty-second	Twenty-sixth	Asphalt blocks	2,513.88
Prairie avenue	Twenty-sixth	Thirty-first	Asphalt blocks	2,595.18
Randolph	Clark	Wabash avenue	Granite blocks	1,068.38
South Water	State	Michigan avenue	Granite blocks	814.19
State	Randolph	Madison	Granite blocks	971.83
State	Madison	Jackson	Granite blocks	1,340.62
State	Randolph	River	Granite blocks	897.56
State	Division	North avenue	Sheet asphalt	2,580.00
Schiller	State	Dearborn avenue	Cedar blocks	279.77
*Scott	150 feet east of State		Sheet asphalt	150.00
St. John place	Lake	Carroll avenue	Cedar blocks	606.00
Twelfth	Canal	Lumber	Medina stone	905.00
Taylor	Blue Island avenue	Throop	Cedar blocks	1,420.00
† Throop	Sixteenth street viaduct	Twenty second		
Taylor	Throop	Ashland avenue	Cedar blocks	1,894.30

Twelfth	South Clark	South Branch	Medina stone	597.00
Twenty-first	State	Michigan avenue	Cedar blocks	697.00
Twenty-second	State	Indiana avenue	Asphalt blocks	1,143.00
Twenty-third	State	Indiana avenue	Cedar blocks	1,093.18
Twenty-fifth	Wabash avenue	Prairie avenue	Cedar blocks	1,104.34
Twenty-sixth	State	Cottage Grove avenue	Cedar blocks	2,261.00
Twenty-eighth	State	Wabash avenue	Asphalt blocks	850.00
*Twenty-ninth	Cottage Grove avenue	Groveland avenue	Cedar blocks	1,240.00
Thirtieth	South Park avenue	Lake Park avenue	Cedar blocks	1,368.00
Thirty-second	State	South Park avenue	Cedar blocks	2,435.00
Thirty-seventh	Vincennes avenue	Boulevard	Cedar blocks	1,353.82
Van Buren	Loomis	Ashland boulevard	Cedar blocks	1,240.00
†Vincennes avenue	Douglas avenue	Egan avenue	Macadam	
Wabash avenue	150 feet south Thirty-first	Thirty-fifth	Asphalt blocks	2,442.58
Wentworth avenue	Eighteenth	Twenty-second	Cedar blocks	1,589.60
Washington	Dearborn	Wabash avenue	Granite blocks	667.28
Walnut	Ashland avenue	Leavitt	Curbing	3,705.00
Wisconsin	Clark	Sedgwick	Sheet asphalt	857.16
Winchester	Madison	Jackson	Cedar blocks	1,320.00
Wood	Division	Milwaukee avenue	Cedar blocks	1,191.00
Wood	Lake	Indiana	Cedar blocks	1,750.00
Total number of lineal feet				125,241.60
Total number of miles (not including 1.23 miles curbing and filling				22.49
1884				
*Alley between Clark and North Park	Webster avenue		Cedar blocks	450.00
Alley bl. 21 Kinzie bet. Ohio and Indiana	St. Clair	Pine	Cedar blocks	801.00
Alley bet. Michigan and Indiana aves	Twentieth	Twenty-second	Cedar blocks	800.50
Alley between Fifth ave. and Franklin	Jackson	Van Buren	Granite blocks	398.15
†Alley between State and Dearborn	Randolph	Washington	Granite blocks	263.64
Alley between State and Wabash ave.	Madison	Monroe	Granite blocks	468.00
Alley between State and Third avenue	Jackson	Van Buren	Medina stone	426.72
Alley east of Michigan avenue	Twelfth	Fourteenth	Planking	1,176.05
Alley between Clark and Pacific ave.	Van Buren	Harrison	Medina stone	797.00

* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Alley between Clark and Fourth avenue	Jackson	Harrison	Medina stone	1,192.84
Alley between Wabash and Michigan aves	Harmon court	Fourteenth	Granite blocks	1,499.20
Alley	North half block 27, Carpenter's		Cedar blocks	252.00
Alley	Block 1, Magies & High's		Cedar blocks	413.35
Ada	Washington	Randolph	Cedar blocks	385.35
†Ashland avenue	Twelfth	Twenty-second	Macadam	
Ashland avenue	Twenty-second	South branch Chicago River	Planking	2,466.45
Astor	Division	Scott	Cedar blocks	267.00
Banks	State	Lake shore drive	Macadam	889.50
Bellevue	Rush	Lake shore drive	Macadam	921.78
Bryant avenue	Vincennes avenue	Stanton avenue	Macadam	881.20
Brown	Twelfth	Maxwell	Curb wall and fill	709.60
Brown	Taylor	Twelfth	Curb and filling	795.15
Carpenter	Milwaukee avenue	Washington boulevard	Cedar blocks	3,696.25
Cedar	Rush	Lake shore drive	Cedar blocks	943.15
*Clark	Madison	Jackson	Granite blocks	1,340.30
Clark	Madison	Randolph	Granite blocks	987.10
Clark	Randolph	River	Granite blocks	957.16
Charles place	Fifth avenue	Franklin	Cedar blocks	325.00
Clinton	Carroll	Kinzie	Cedar blocks	177.00
Congress	Hoyne avenue	Leavitt	Curb and fill	617.60
Congress	Center avenue	Loomis	Cedar blocks	1,193.50
Congress	Lincoln	Hoyne avenue	Macadam	600.00
Congress	Fifth avenue	Franklin	Cedar blocks	325.00
Court place	Clark	Dearborn	Medina stone	325.00
Court place	State	Dearborn	Granite blocks	322.45
Cottage Grove avenue	Douglas avenue	Egan avenue	Cedar blocks	2,750.00
Cottage Grove avenue	Thirtieth	Douglas avenue	Cedar blocks	3,180.00
Couch place	Clark	State	Medina stone	325.00
Curbing around City Hall			Curbing	763.86

*North Clark	Bridge	Viaduct (east side)	Granite blocks	230.67
Dearborn	Twenty-second	Twenty-seventh	Curb and fill	2,998.00
Dearborn	Thirty-third	Egan avenue	Curbing	3,855.00
Dearborn avenue	Chicago avenue	North avenue	Sheet asphalt	5,294.00
Dearborn avenue	Chicago avenue	North Water street	Cedar blocks	2,928.46
Division	Milwaukee avenue	Lincoln	Cedar blocks	2,118.40
DeKoven	Jefferson	Halsted	Cedar blocks	1,231.10
Desplaines	Hubbard	Indiana	Cedar blocks	238.00
Desplaines	Harrison	Twelfth	Cedar blocks	2,276.20
*Elm	Clark	Dearborn avenue	Cedar blocks	318.50
Elston avenue	Milwaukee avenue	933 feet south of Division	Cedar blocks	1,314.20
Erie	Milwaukee avenue	River	Cedar blocks	1,347.70
Eighteenth	Blue Island avenue	Ashland avenue	Cedar blocks	1,232.00
Eighteenth	Halsted	Blue Island avenue	Cedar blocks	3,634.60
Emma	Milwaukee avenue	Ashland avenue	Cedar blocks	1,264.70
Erie	Ashland avenue	Center avenue	Cedar blocks	2,525.50
Evergreen avenue	Leavitt	Milwaukee avenue	Cedar blocks	2,591.00
Ewing place	Robey	Hoyne avenue	Macadam	598.70
Ewing	Canal	Halsted	Cedar blocks	2,011.50
Fifth avenue	Randolph	River	Granite blocks	958.00
Fourteenth	Blue Island avenue	Ashland avenue	Cedar blocks	2,562.30
Fowler	Evergreen avenue	Leavitt	Cedar blocks	1,967.00
Forquer	Canal	Halsted	Cedar blocks	2,012.40
Forquer	Halsted	Blue Island avenue	Cedar blocks	887.50
Franklin	Ontario	Chicago avenue	Cedar blocks	1,105.00
Fullerton avenue (south ½)	Southport avenue	North Branch Chicago River	Cedar blocks	2,925.19
Fulton	Robey	Western avenue	Cedar blocks	2,519.00
Gano	Prairie avenue	South Park avenue	Macadam	817.60
Grant place	Clark	Larrabee	Cedar blocks	1,289.00
Green	Lake	Fulton	Cedar blocks	335.00
Halsted	Harrison	Twelfth	Cedar blocks	2,479.30
Halsted	Twelfth	Fifteenth	Cedar blocks	1,971.50
Halsted (sundry lots)	Canalport avenue	Viaduct	Cedar blocks	388.50
†Harrison	Ogden avenue	Hoyne avenue	Macadam	

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* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
†Harrison	Hoyne avenue	Rockwell	Macadam	
Hobbie	Crosbie	Larrabee	Curb and fill	390.00
Hoyne avenue	Bryson	North avenue	Cedar blocks	1,801.90
Hubbard	May	Ashland avenue	Cedar blocks	3,008.00
Illinois	Clark	St. Clair	Cedar blocks	1,885.00
Jackson	State	Michigan avenue	Granite blocks	716.50
Johnson	Twelfth	Fourteenth	Curb wall and fill	1,197.50
Kinzie	Clark	Rush	Cedar blocks	1,521.00
La Salle	N. Water	Chicago avenue	Cedar blocks	2,652.36
Lake	Ashland avenue	Western avenue	Cedar blocks	5,274.50
Laflin	Madison	Harrison	Cedar blocks	2,278.50
Leavitt	Harrison	Ogden avenue		1,816.40
Lincoln	Chicago avenue	Milwaukee avenue	Macadam	4,056.40
Le Moyne	Robey	Leavitt	Cedar blocks	1,199.00
Leavitt	Lake	Harrison	Cedar blocks	3,340.20
†Locust	La Salle	Clark		
Macalister place	Center avenue	Loomis	Curb and fill	1,313.70
Macalister place	Center avenue	Loomis	Cedar blocks	1,263.90
May	Harrison	Twelfth	Cedar blocks	2,426.80
Maxwell	Halsted	Blue Island avenue	Cedar blocks	2,191.20
Marble place	State	Dearborn	Granite blocks	351.53
Madison	Clark	River	Granite blocks	1,882.68
Marble place	Clark	Dearborn	Medina stone	321.88
Madison	Rockwell	California avenue	Cedar blocks	1,273.28
Morgan	Twelfth	Fourteenth	Cedar blocks	1,263.00
North avenue	Milwaukee avenue	North branch of river	Cedar blocks	5,344.00
North avenue	Milwaukee avenue	Western avenue	Curb and fill	5,024.60
Oak	Dearborn avenue	Lake shore drive	Cedar blocks	1,396.25
*Oakwood boulevard	Line of city limits	Lake shore	Cedar blocks	637.60
Ogden avenue	Madison	Twelfth	Cedar blocks	6,746.35

Pacific avenue	Jackson	Van Buren	Granite blocks	426.50
Page	Madison	Lake	Cedar blocks	1,108.50
Park	Robey	Evergreen avenue	Cedar blocks	945.50
Peoria	Milwaukee avenue	Indiana	Cedar blocks	492.00
Quincy	State	Dearborn	Granite blocks	851.28
Racine avenue	Clybourn avenue	Center	Cedar blocks	218.50
Richie place	Goethe	Bank	Curb and fill	285.00
Ray avenue	Prairie avenue	South Park avenue	Macadam	769.87
Rhodes avenue	University place	Northern terminus	Macadam	1,884.78
Robey	North avenue	Bryson	Cedar blocks	1,775.70
Scott	State	Lake shore drive	Curb and fill	564.00
Schiller	State	Lake shore drive	Curb and fill	729.00
State	Chicago avenue	Division	Cedar blocks	2,460.18
Stone	Division	Goethe	Curb and fill	618.72
Superior	Pine	Eastern terminus	Cedar blocks	750.78
South Water	State		Granite blocks	725.50
South approach to Rush street bridge			Cedar blocks	187.00
Sheldon	Randolph	Lake	Cedar blocks	378.00
Sholto	Harrison	Polk	Cedar blocks	835.00
Sholto	Polk	Taylor	Cedar blocks	797.60
North approach to Rush street bridge			Cedar blocks	125.00
Throop	Viaduct	Twenty-second	Curb wall and fill	2,642.70
Throop	Viaduct	Twenty-second	Cedar block	2,642.70
Throop	Madison	Harrison	Cedar block	2,278.80
†Thirty-second	South Park avenue	Cottage Grove avenue	Macadam	
Twenty second	Wentworth avenue	Grove	Cedar blocks	1,687.40
Twenty-ninth	State	Cottage Grove avenue	Cedar blocks	2,235.64
Twenty-third	Indiana avenue	South Park avenue	Cedar blocks	1,027.96
Twenty-ninth	State	Wentworth avenue	Cedar blocks	1,192.00
Twelfth	Canal	Blue Island avenue	Cedar blocks	3,667.10
Twenty-second	Brown	Ashland avenue	Cedar blocks	4,470.25
Van Buren	Paulina	Western avenue	Cedar blocks	4,299.40
Vernon avenue	Thirtieth	Thirty-first	Cedar blocks	398.85
†Vernon avenue	Thirty-first	Douglas avenue	Macadam	

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IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Vincennes avenue	Douglas avenue	Egan avenue	Macadam.	2,885.80
Wabash avenue	Madison	Lake	Granite blocks	1,170.30
Wabash avenue	Lake	River	Granite blocks	988.00
Wabash avenue	Douglas avenue	Thirty-seventh	Granite blocks	1,585.00
Wells	Clark		Curb and fill	449.68
Willow	Larrabee	Sheffield avenue	Curb wall and fill	2,582.95
Willard place	Randolph	Washington	Cedar blocks	496.00
Wilson	Canal	Jefferson	Cedar blocks	1,267.20
Total number of lineal feet				205,814.40
Number of miles	(not including 4.46 miles of	curbing and filling)		34.52
1885				
Alley in block 29, Carpenter's Addition	May	Ann	Cedar blocks	250.00
Alley between Jefferson and Desplaines	Washington	Randolph	Cedar blocks	378.30
Alley between Park avenue and Lake	Hoyne avenue	Leavitt	Planking	597.40
Alley between State and Wabash av	Van Buren	Eldridge Court	Medina stone	2,006.80
Alley between Clark and Fourth av.	Madison	Taylor	Cedar blocks	1,573.60
*Alley between State and Dearborn av	Elm	100 feet north	Cedar blocks	100.00
†Alley between Prairie and Indiana av	Eighteenth	Twentieth	Asphalt blocks	
Alley between Calumet and Prairie av	Twentieth	Twenty-first	Asphalt blocks	373.30
Alley between Wabash and Michigan av	Jackson	Van Buren	Granite blocks	346.20
Alley between Wabash and Michigan av	Madison	Washington	Granite blocks	330.60
Alley N. W. ¼ block 90, S. S. Addition	Between Van Buren and Congress	Market	Granite blocks	148.60
Aberdeen	Madison	Harrison	Cedar blocks	2,395.30
Adams	Western avenue	Rockwell	Cedar blocks	1,309.10
Adams	Hoyne avenue	Oakley avenue	Cedar blocks	1,329.90
Archer avenue	State	Halsted	Cedar blocks	5,868.00
Ashland avenue	Chicago, Alton & St. Louis Railroad	South branch Chicago River	Cindering	1,913.00
Ashland avenue	Milwaukee avenue	Clybourn place	Cedar blocks	4,338.90
Austin avenue	Desplaines	May	Cedar blocks	2,702.40

Ashland avenue	Twelfth	Twenty-second	Macadam	5,311.70
Ann	Randolph	Lake	Cedar blocks	381.00
Augusta	Milwaukee avenue	Elston avenue	Cedar blocks	968.10
Augusta	Milwaukee avenue	Wood	Cedar blocks	2,863.50
Beethoven place	Wells	Sedgwick	Cedar blocks	981.00
Blue Island avenue	Harrison	Viaduct	Cedar blocks	5,970.00
Brown	Maxwell	Fourteenth	Curb wall and fill	379.20
Butterfield	Sixteenth	Twenty-second	Curbing and filling	2,363.10
Calhoun place	Clark	Dearborn	Granite blocks	823.10
†Campbell avenue	Madison	Polk	Curbing	
Campbell avenue	Leavitt	Oakley avenue	Cedar blocks	712.30
Canalport avenue	Canal	Halsted	Cedar blocks	2,395.00
Chicago avenue	Milwaukee avenue	Leavitt	Cedar blocks	1,195.20
Chicago avenue	Milwaukee avenue	Ashland avenue	Cedar blocks	3,151.80
Clark	Division	North avenue	Cedar blocks	2,668.70
Clybourn place	Clybourn avenue	North branch Chicago River	Cedar blocks	1,482.40
Congress	Leavitt	Hoyne avenue	Cedar blocks	603.60
*Congress	Lincoln	Hoyne avenue	Macadam	602.30
Cornell	Milwaukee avenue	Ashland avenue	Cedar blocks	2,420.70
West Clybourn place	North branch Chicago River	Ashland avenue	Cedar blocks	758.20
De Kalb	Flournoy	Leavitt	Cedar blocks	1,454.30
†Dearborn	Thirty-third	Egan avenue	Macadam	
Dearborn	Intersection of	Washington	Haydenville Hollow Tile Co	
Dearborn	Randolph	Madison	Granite blocks	896.00
Dearborn	Jackson	Polk	Cedar blocks	2,125.30
Division	Clark	Sedgwick	Cedar blocks	1,660.20
Douglas avenue	L. S. & M. S. R'y	Michigan avenue	Macadam	1,394.80
Elm	La Salle	Wells	Cedar blocks	360.60
Erie	Curtis	North Center avenue	Cedar blocks	631.80
Ewing	Halsted	Blue Island avenue	Cedar blocks	691.20
†Flournoy	Ogden avenue	Leavitt	Curb and fill	
Fourteenth	Canal	Blue Island avenue	Cedar blocks	4,547.50
Front	Elston avenue	Carpenter	Cedar blocks	727.60
Fulton	Ashland avenue	Robey	Cedar blocks	2,475.30

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* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Garfield avenue	Clark	Sedgwick	Cedar blocks	386.00
Garfield avenue	Sedgwick	Halsted	Cedar blocks	2,404.00
Goethe	Wells	Lake shore drive	Cedar blocks	1,878.20
*Groveland avenue	Thirty-first	334 feet north	Cedar blocks	396.00
Green	Indiana	Chicago avenue	Cedar blocks	1,252.50
Green	Madison	Lake	Cedar blocks	1,178.80
Harrison (except railroad)	Ogden avenue	Hoyne avenue	Macadam	1,897.80
Harrison	Hoyne avenue	Rockwell	Macadam	3,478.60
Halsted	Canalport avenue	Twenty-second	Cedar blocks	698.10
Halsted	Randolph	Indiana	Cedar blocks	1,869.20
Hermitage avenue	Jackson	Polk	Cedar blocks	1,950.90
Hoyne avenue	Harrison	DeKalb	Cedar blocks	695.70
Huron	Milwaukee avenue	Ashland avenue	Cedar blocks	3,662.80
Hurlbut	North avenue	Fullerton avenue	Curbstone and fill	5,297.00
*Huron	Pine	St. Clair	Cedar blocks	301.40
Idaho	Van Buren	Harrison	Curbstone and fill	736.30
Illinois	Clark	Franklin	Cedar blocks	978.30
Johnson	Thirty-seventh	Thirty-eighth	Cedar blocks	575.50
Laflin	Harrison	Taylor	Cedar blocks	1,692.40
Leavitt	Ogden avenue	Twelfth	Cedar blocks	619.00
Liberty	Canal	Jefferson	Cedar blocks	739.30
Lincoln	Congress	Polk	Curbstone and fill	940.00
Locust	Clark	La Salle avenue	Cedar blocks	323.00
Lytle	Taylor	Twelfth	Curbstone and fill	652.00
Main	Thirty-first	South branch Chicago River	Cedar blocks	4,060.80
May	Chicago avenue	Fulton	Cedar blocks	3,123.60
Milwaukee avenue	Union	Division	Cedar blocks	7,373.00
Milwaukee avenue	Division	North avenue	Cedar blocks	4,112.10
Madison	Ashland avenue	Western avenue	Cedar blocks	5,137.30
May	Milwaukee avenue	George	Cedar blocks	637.00
Monroe	Ashland avenue	Robey	Cedar blocks	2,144.90

Monroe	Western avenue	Rockwell	Cedar blocks	1,846.80
Morgan	Randolph	Lake	Cedar blocks	379.80
Monroe	State	Clark	Granite blocks	753.50
*Oak	Franklin	Larrabee	Cedar blocks	1,847.60
Oak	Wells	Franklin	Cedar blocks	864.90
Ogden avenue	Madison	Randolph	Cedar blocks	1,042.00
Ontario	Clark	Franklin	Cedar blocks	987.30
Paulina	Division	Milwaukee avenue	Cedar blocks	1,465.20
Paulina	Jackson	Harrison	Cedar blocks	1,058.70
Peck Court	State	Michigan avenue	Macadam	700.70
†Pitney	Thirty-first	Archer avenue	Curb and fill	
Portland avenue	Twenty-sixth	Thirty-first	Cedar blocks	2,592.30
Polk	Ogden avenue	Western avenue	Cedar blocks	2,092.90
East Pearson	East terminus	West terminus	Cedar blocks	1,484.80
Quincy	La Salle	Franklin	Granite blocks	646.50
Randolph	Halsted	Ogden avenue	Granite blocks	4,356.90
†Rhodes avenue	Thirty-first	South line lot 1, Assessor's division	Macadam	
Sedgwick	Lincoln avenue	Belden avenue	Cedar blocks	1,538.90
Schiller	Clark	Wells	Cedar blocks	666.60
Sigel	Wells	Sedgwick	Curbstone and fill	985.80
Sixteenth	State	Michigan avenue	Granite blocks	696.10
Sixteenth	Michigan avenue	Prairie avenue	Macadam	884.00
Southport avenue	Clybourn place	Fullerton avenue	Curbstone and fill	2,660.40
*East half State	Jackson	Van Buren	Granite blocks	232.50
Stanton avenue	Douglas avenue	Egan avenue	Cedar blocks	2,495.60
Waverly place	Madison	Washington	Cedar blocks	894.20
†Thirty-first	Halsted	Pitney court	Cedar blocks	
Thirty-fourth	State	Indiana avenue	Macadam	1,026.00
Thirty-third	Lake Shore & Michigan Southern R'y	State	Macadam	707.90
Thirty-third	State	South Park avenue	Macadam	2,152.60
Thirty-second	South Park avenue	Cottage Grove avenue	Macadam	1,000.00
†Thirty-seventh	Vincennes avenue	Cottage Grove avenue	Macadam	
Thirty-seventh	State	Halsted	Cedar blocks	5,062.10
Twenty-first	State	Archer avenue	Macadam	1,049.40

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* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
† Twenty-fourth	State	Hanover	Curb wall and fill	
Twenty-fifth	State	Wabash avenue	Cedar blocks	349.60
Twenty-second	State	La Salle	Cedar blocks	1,003.50
† Twenty-first	Blue Island avenue	Western avenue	Curbstone and fill	
Union	Twelfth	Meagher	Cedar blocks	1,959.60
Van Buren	Halsted	Loomis	Cedar blocks	3,792.30
Vernon avenue	Douglas avenue	Thirty-seventh	Macadam	1,254.90
Vernon avenue	Thirty-first	Douglas avenue	Macadam	2,598.00
Wabash avenue	Madison	Jackson	Granite blocks	1,448.30
Wabash avenue	Jackson	Harrison	Granite blocks	1,326.00
Walton	Dearborn avenue	North State	Sheet asphalt	357.50
Warren avenue	Ogden avenue	Leavitt	Sheet asphalt	4,308.50
Walnut	Ashland avenue	Western avenue	Cedar blocks	4,997.20
Western avenue	Lake	Van Buren	Cedar blocks	2,800.90
Webster avenue	North Park avenue	Halsted	Cedar blocks	3,007.20
Wendell	Wells	Sedgwick	Curb wall and fill	1,012.70
Willow	Clybourn avenue	Larrabee	Cedar blocks	2,563.10
Winchester avenue	Jackson	Harrison	Cedar blocks	1,047.00
Will	Milwaukee avenue	Augusta	Cedar blocks	498.50
† Wood	Indiana	Chicago avenue	Cedar blocks	
Total number of lineal feet				238,128.00
Number of miles	(not including 7.04 miles	curbing and filling)		38.06
1886.				
Alley between Illinois and Indiana	North State	Dearborn avenue	Oak planking	359.25
Alley between Illinois and Michigan	La Salle avenue	Clark	Cedar blocks	320.45
Alley between Illinois and Michigan	Dearborn avenue	State	Cedar blocks, curb and fill	358.22
Alley between State and Wabash ave.	Thirteenth	Fourteenth	Granite blocks	568.42
Alley in block 4, Ft. Dearborn add			Granite blocks	497.84
Aldine square (roadway)			Sheet asphalt **(concrete foundat'n)**	921.21

Alley between Indiana and Prairie ave.	**S. line N. half lots 2 and 17 S. of 21st.**	Twenty-second	C. & G. Cedar blocks	350.80
Alley between State and Wabash ave.	Eighteenth	Twentieth	Cedar blocks	802.68
Alley bet. Blue Island ave. and Silver.	Harrison	Gurley	Three-inch pine plank	461.12
Alley between Lake and Walnut	Wood	Lincoln	Three-inch pine plank	600.00
Alley, block 1, Sawyer's addition	Elizabeth	Ada	Cedar blocks	453.89
Alley, block 48, Carpenter's addition	Curtis	May	Cedar blocks	252.48
Alley between Madison and Washington	Ann	Elizabeth	Cedar blocks	492.33
North Alley, block 47, Carpenter's add.	Ann	May	Cedar blocks	251.60
Alley between Park avenue and Lake	Wood	Lincoln	Cedar blocks	599.97
Alley between Halsted and Green	Madison	Monroe	Cedar blocks	397.06
Alley bet. Park ave. and Washington bd.	Robey	Hoyne avenue	Cedar blocks	599.20
Alley between Ashland ave. and Paulina	Park avenue	Washington boulevard	Cedar blocks	283.99
Alley block 2, Union Park addition	Sheldon	**Lots 98 and 10, Union Park addition**	Cedar blocks	316.66
Aberdeen	Harrison	Polk	Cedar blocks	918.28
Ada	Randolph	Carroll avenue	C. & F. cedar blocks	1,151.23
Allport	Sixteenth	Nineteenth	C. & F. cedar blocks	1,222.06
Arthington	Center avenue	Lytle	Curb and filling	369.00
Astor	Scott	Schiller	Cedar blocks and curbing	997.64
Austin avenue	Ashland avenue	Hoyne avenue	Cedar blocks	3,341.10
Austin avenue	Hoyne avenue	Western avenue	C. & F. cedar blocks	2,028.12
*Belden avenue	North Park avenue	North Clark	Macadam	686.05
Brown	Taylor	Twelfth	Filling and cedar blocks	796.07
Bunker	Canal	Halsted	Cedar blocks	2,027.23
Campbell avenue	West Madison	Polk	Cedar blocks	8,668.96
Center avenue	Milwaukee avenue	Augusta	Cedar blocks	595.85
Carroll avenue	Leavitt	Ashland avenue	C. & F. cedar blocks	3,810.31
Cicero court	Jackson	Van Buren	C. & F. cedar blocks	466.01
Clinton	Van Buren	Harrison	Cedar blocks	812.14
Clinton	Madison	Van Buren	Cedar blocks	1,609.69
Clarkson court	Washington boulevard	Lake	C. and filling, cedar blocks	403.45
Clark	Jackson	Polk (extension railroad)	Granite blocks (repaved)	2,192.40
Chestnut	North Clark	Wells	Cedar blocks	650.54
Chestnut	Rush	Pine	Cedar blocks C. & G.	514.59
Chicago avenue	Clark	North Branch Chicago River	Cedar blocks and grading	8,784.80

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* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Cottage Grove avenue	Twenty-second	Thirtieth	Cedar blocks	5,235.68
Congress	Halsted	Center avenue	Curbstone	2,331.00
Cornelia	Milwaukee avenue	Ashland avenue	C. & F. cedar blocks	1,986.67
Curtis	Fulton	Huron	C. & F. cedar blocks	2,424.47
West half Cottage Grove av.	College place	University place	C. & F. cedar blocks	568.40
Depuyster	Halsted	Desplaines	Cedar blocks	814.06
Dearborn	Thirty-third	Thirty-ninth	Macadam	3,967.96
Dearborn	Twenty-second	Twenty-sixth	Cedar blocks	2,809.89
Dearborn	Randolph	South Water	Granite blocks	756.87
Dearborn	Twenty-sixth	Twenty-seventh	Macadam	425.97
Division	North branch canal	North branch Chicago River	Cedar blocks	1,911.06
Elston avenue	100 feet north of Wade	Division	C. & F. cedar blocks	928.74
*Franklin	Chicago avenue	Division	Cedar blocks	2,691.91
Fifth avenue	Randolph	Madison	Granite blocks	855.45
Flournoy	Leavitt	Ogden avenue	Cedar blocks	1,401.21
Front	Carpenter	Sangamon	Cedar blocks	406.50
Fulton	Ashland avenue	Ada	Cedar blocks	1,714.82
Fulton	Sangamon	Ada	Cedar blocks	2,848.78
*Graves place	Cottage Grove avenue	Thirty-third	Cedar blocks	390.70
Goethe	Wells	Sedgwick	Cedar blocks	895.57
Honore	Adams	Harrison	C. & F. cedar blocks	1,807.22
West Huron	Ashland avenue	Leavitt	G. & C. cedar blocks	3,750.85
Huron	State	Pine	Cedar blocks	937.06
Hurlbut	North avenue	Fullerton avenue	Cedar blocks	5,221.87
Huron	North Clark	North Franklin	Cedar blocks	978.34
Idaho	Van Buren	Harrison	Cedar blocks	782.69
West Indiana	Ashland avenue	Halsted	Cedar blocks	5,588.28
West Indiana	Ashland avenue	Hoyne avenue	Cedar blocks	3,524.69
Indiana avenue	Eighteenth	Twenty-second	Cedar blocks	1,804.10
Jefferson	Van Buren	Harrison	Cedar blocks	808.41
Johnson	West Twelfth	West Fourteenth	Cedar blocks	1,207.30

Johnson	West Fourteenth	Wright	Curbing and filling	391.60
Keith	West Huron	West Chicago avenue	C. & F. cedar blocks	588.96
Larrabee	Webster avenue	Fullerton avenue	Cedar blocks and C.	1,291.34
Langley avenue	Thirty-seventh	Egan avenue	Cedar blocks	1,182.06
Laflin	Taylor	Twelfth	C. & fill cedar blocks	852.89
Liberty	Jefferson	Halsted	C. & fill cedar blocks	1,160.54
Lytle	Taylor	Twelfth	Cedar blocks	797.02
Mather	Desplaines	Halsted	Curbing, cedar blocks	843.20
Madison	Clark	State	Granite blocks	756.28
Market	Madison	Adams	Granite blocks	892.70
Maple	Dearborn avenue	State	Cedar blocks	357.48
Morgan	Washington	Randolph	Cedar blocks & C.	379.75
Morgan	Lake	Fulton	Cedar blocks & C.	340.40
Monroe	Throop	Loomis	Cedar blocks	595.00
Morgan	Harrison	Twelfth	Cedar blocks	2,522.64
Monroe	Clark	Market	Granite blocks	1,587.43
Mohawk	North avenue	Garfield avenue	Cedar blocks, C. & G.	3,411.77
Newberry avenue	Maxwell	Fourteenth	C. & F. cedar blocks	378.30
Newberry avenue	West Twelfth	Maxwell	Curbing and filling	820.30
Nineteenth	Center avenue	Blue Island avenue	C. & F. cedar blocks	1,626.78
North avenue	Milwaukee avenue	Western avenue	Cedar blocks	2,673.31
Oakley avenue	Adams	Ogden avenue	C. & F. cedar blocks	4,095.61
Paulina	Harrison	Polk	Cedar blocks & C.	922.46
Paulina	North avenue	Wabansia avenue	C. & F. cedar blocks	613.92
Paulina	Milwaukee avenue	North avenue	Cedar blocks	1,967.25
Paulina	Lake	Madison	Cedar blocks & C.	1,114.75
Paulina	Madison	Jackson	C. F. & G. cedar blocks	1,186.61
Paulina	Chicago avenue	Division	C. & G. cedar blocks	2,580.86
Paulina	Lake	Indiana	C. G. and cedar blocks	1,739.34
Paulina	W. Chicago avenue	Indiana	C. and G. cedar blocks	1,956.36
Pitney court	Archer avenue	Thirty-first	Cedar blocks	540.87
Polk	Halsted	Center avenue	Cedar blocks	2,498.68
Polk	Ogden avenue	Robey	C. and F. cedar blocks	459.59
Quincy	Desplaines	Halsted	Cedar blocks and curbing	820.65

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* Private contract.

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Rhodes avenue, E. ½	College place	University place, ex. 25 ft.	Macadam	524.50
Robey	Lake	Indiana	C. and G. cedar blocks	1,698.91
Robey	Ogden avenue	W. Polk	C. and F. cedar blocks	568.73
Robey	Division	Bryson	Cedar blocks and curbing	714.27
Robey	W. Polk	W. Twelfth	C. and F. cedar blocks	1,701.04
Rush	Erie	Chicago avenue	Gravel (crushed)	1,006.82
Sangamon	Monroe	Harrison	Cedar blocks	1,976.61
Sangamon	Chicago avenue	C. & N.-W. tracks	Cedar blocks	558.50
School	Jefferson	Desplaines	Cedar blocks	319.05
Schiller	N. State	Lake Shore Drive	Macadam	749.02
Schiller	Clark	Dearborn avenue	Cedar blocks and C.	320.88
Schiller	Wells	Sedgwick	Cedar blocks and C.	1,011.29
Sebor	Desplaines	Halsted	Grade and curb	810.00
Seeley avenue	Madison	Van Buren	C. and F. cedar blocks	1,595.01
Sedgwick	Lincoln avenue	Belden avenue	Cedar blocks	2,725.14
Sedgwick	North avenue	Division	Cedar blocks and curbing	1,813.19
Sherman	Jackson	Van Buren	Granite blocks	398.11
Sigel	Wells	Sedgwick	Cedar blocks	1,004.31
Southport avenue	Clybourn avenue	Fullerton avenue	Cedar blocks	2,937.22
St. John's place	Carroll avenue	Arbor place	Curbing, cedar blocks	260.61
Tell place	Milwaukee avenue	Ashland avenue	C. and F. cedar blocks	934.40
Thirteenth	Blue Island avenue	Ashland avenue	C. wall and fill	2,898.50
Thirty-seventh	Vincennes avenue	Cottage Grove avenue	Macadam	802.18
Thirty-first	Halsted	Pitney court	C. W. and F. & cedar blocks	4,457.74
Twenty-first	Blue Island avenue	Western avenue	Grading and cedar blocks	5,855.24
Twelfth	Blue Island avenue	Ashland avenue	Cedar blocks	3,651.75
Twentieth	Halsted	Center avenue	C. and F. cedar blocks	2,699.94
Twentieth	Throop	Blue Island avenue	C. and F. cedar blocks	1,250.17
Twenty-fourth	State	Hanover	Cedar blocks	2,743.63
Twenty-third	Wentworth avenue	Hanover	Cedar blocks, C. and F	1,670.82
Twenty-fourth	State	Hanover	Curbing and filling	

Twenty-third	Park avenue	Cottage Grove avenue	Cedar blocks, C. and G.	1,179.08
Twenty-sixth	State	Wentworth avenue	Cedar blocks, C. and F.	1,175.38
Twenty-fourth	Hanover	Butler	Cedar blocks, C. and F.	404.94
Van Buren	Western avenue	California avenue	Cedar blocks, C. and F.	2,562.27
Van Buren	California avenue	Kedzie	Cedar blocks, C. and F.	2,844.98
Vernon avenue	Twenty-ninth	Thirtieth	Cedar blocks and curbing	812.30
Walton place	State	Pine	Cedar blocks and curbing	971.36
South Water	Clark	Fifth avenue	Granite blocks, repaved	758.00
Wabash avenue	Twelfth	Sixteenth	Cedar blocks, repaved	2,762.16
Wabash avenue	Sixteenth	Twenty-second	Cedar blocks, repaved	2,685.90
Wabash avenue	Thirty-seventh	Egan avenue	Asphalt blocks, C. and F.	1,491.69
Wesson	Oak	Division	Cedar blocks	1,184.94
Wentworth avenue	Thirty-third	Egan avenue	Cedar blocks, C. and F.	3,935.50
Western avenue	Van Buren	Ogden avenue	Cedar blocks, C. and F.	4,050.97
West Erie	Ashland avenue	Leavitt	Cedar blocks, C. and G.	3,799.15
West Erie	Milwaukee avenue	Curtis	Cedar blocks	853.92
West Eighteenth	Canal	Union	Cedar blocks	1,465.01
West Eighteenth	Ashland avenue	Wood	Cedar blocks, C. and F.	1,340.97
Wilcox avenue	Western avenue	Rockwell	Cedar blocks, C. and F.	1,277.53
Wood	Harrison	Twelfth	Cedar blocks, C. and F.	2,653.83
Wood	Milwaukee avenue	North avenue	Cedar blocks	1,217.48
Wood	Chicago avenue	Division	Cedar blocks and C. wall	2,670.33
Wood	Indiana	Chicago avenue	Cedar blocks	1,811.32
Total number of lineal feet				239,553.60
Number of miles	(not including 1.71 miles	curbing and filling)		48.66
1887.				
Alley north half Block 4, Kinzie	Cass	Center line, lot 3	Cedar blocks	125.00
***Alley between Wells and La Salle**	Goethe	Schiller	Cb. W. cedar blocks	1,477.87
Alley between Clark and La Salle	Grant place	Schiller	Cedar blocks	1,936.00
Alley bet. State and Wabash avenue	Sixteenth	Eighteenth	Granite blocks	1,227.45
Alley bet. Michigan and Indiana aves.	Fourteenth	Sixteenth	Cedar blocks	1,231.89
Alley bet. Groveland and Lake Pk. aves.	Thirteenth	Thirty-first	Cedar blocks	532.70

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* Private contract.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Alley bet. Michigan and Indiana aves.	Twenty ninth	Thirtieth	Asphalt blocks	810.80
Alley bet. Fifth avenue and La Salle	Monroe	South line east and west alley	Granite blocks	190.70
Alley bet. Washington boul'd & Park ave.	Page	Wood	Cedar blocks	261.48
Alley bet. Canal and Clinton	Madison	Washington	Cedar blocks	400.75
Alley bet. Morgan and Aberdeen	Rundell place	Church court	Cedar blocks	120.00
Alley bet. Madison and Monroe	Loomis	Laflin	Cedar blocks	1,087.00
Alley bet. Clinton and Jefferson	Madison	Washington	Cedar blocks	402.90
Alley bet. Washington and Madison	East of May, Block 48		Cedar blocks	245.65
Alley Block 1. Wright's addition	Elizabeth	Willard place	Cedar blocks	251.00
Alley Block 47, Carpenter's addition	May	Ann	Cedar blocks	251.22
Alley between Randolph and Lake	Ann	Ninety feet west	Cedar blocks	90.00
Alley between Green and Halsted	Washington	Madison	Cedar blocks	317.34
Alley bet. Center avenue and Throop	Madison	Monroe	Cedar blocks	396.25
S. Alley McNeil's, 6, 7 & 8 Wright's ad'n	Ada	Sheldon	Cedar blocks	381.51
N. Alley McNeil's, 6, 7 & 8 Wright's ad'n	Ada	Sheldon	Cedar blocks	380.82
Alley between Desplaines and Jefferson	Madison	Washington	Cedar blocks	303.57
Alley bet. Washington and Randolph	Elizabeth	Ada	Cedar blocks	326.00
Alley east and west, Block 36	Line of north and south alley	Center avenue	Cedar blocks	393.87
Alley between Halsted and Union	Barber	Fourteenth	Cedar blocks	572.00
Adams	State	Chicago River	Granite blocks	2,380.22
Ada	Carroll avenue	Arbor place	Cedar blocks	286.05
Ann	Lake	Fulton	Cedar blocks	347.42
Archer avenue	Chicago River	Western avenue	Cedar blocks	6,960.70
Ayres court	Huron	Chicago avenue	Cedar blocks	588.00
Belden avenue	Clark	Hurlbut	Cedar blocks	495.90
Barber	Canal	Halsted	C. & F. cedar blocks	1,884.31
Blackhawk	Elston avenue	Paulina	C. & F. cedar blocks	2,448.60
Boone	De Kalb	Leavitt	Cedar blocks	136.98
Brown	Twelfth	Fourteenth	Cedar blocks	1,202.77
Brown	Fourteenth	Wright	Curbing and filling	377.00
Burton place	Clark	Dearborn avenue	Cedar blocks	319.49

Butler	Archer avenue	Twenty-fourth	Cedar blocks	360.38
Canal	Madison	Monroe	G. Granite blocks	422.01
Canal	Monroe	Adams	G. Granite blocks	505.38
Chestnut	Clark	State	C. & G. cedar blocks	681.83
Chicago avenue	Wood	Ashland avenue	Cedar blocks	1,331.84
Chicago avenue	Wood	Leavitt	C. & F. cedar blocks	2,603.77
Church court	Morgan	Aberdeen	Cedar blocks	661.36
Claremont avenue	Flournoy	Grenshaw	C. & F. cedar blocks	1,826.71
Clinton	Harrison	Maxwell	C. & F. cedar blocks	2,902.35
Congress	Halsted	Center avenue	G. cedar blocks	2,394.89
College place	Cottage Grove avenue	Rhodes avenue	C. & F. cedar blocks	566.14
Couch place	Fifth avenue	Franklin	Granite blocks	320.42
Crosby	Division	Hobbie	Cedar blocks	960.03
Dashiel	Twenty-sixth	Thirtieth	Cedar blocks	2,877.99
Delaware place	Dearborn avenue	Pine	Cedar blocks	1,279.72
Dickson	Division	North avenue	Cedar blocks	2,575.48
Douglas avenue	L., S. & M. S. R'y	Halsted	C. & F. cedar blocks	4,158.88
Douglas avenue	Halsted	Chicago River	C. & F. cedar blocks	2,706.85
Dussold	Jefferson	Halsted	Cedar blocks	1,155.60
Elm	State	Lake Shore drive	Cedar blocks	289.69
North half Egan avenue	State	Cottage Grove avenue	C. & G. cedar blocks	4,966.38
Ewing place	Hoyne avenue	Leavitt	C. & F. macadam	641.70
Fifth avenue	Adams	Quincy	Granite blocks	220.00
Fourteenth	Ashland avenue	Wood	Curbing and filling	1,268.00
Franklin	North avenue	Sigel	Curbing	1,507.77
*Forest avenue	Douglas avenue	Egan avenue	Macadam	1,946.00
Franklin	Madison	Adams	Granite blocks	796.00
Franklin	Adams	Quincy	Granite blocks	222.00
Fulton	Western avenue	P., C. & St. L. R. R.	Cedar blocks	1,239.75
Green	Indiana	Kinzie	C. cedar blocks	674.55
Green	Madison	Van Buren	Cedar blocks	1,585.83
Grenshaw	Oakley avenue	Campbell avenue	C. & F. cedar blocks	1,197.13
Gurley	Blue Island avenue	May	C. & F.	1,560.00
Hamilton avenue	Monroe	Pratt place	C. & F. cedar blocks	925.93

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* Private contract.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Hastings	Blue Island avenue	Ashland avenue	Cedar blocks	2,743.22
Henry	Morgan	Blue Island avenue	C. & F.	238.20
Henry	Blue Island avenue	Ashland avenue	C. & F.	1,647.00
Homan avenue	Madison	Lake	C. and macadam	1,345.38
Hoyne avenue	Division	Bryson	C. & F. cedar blocks	642.94
Indiana avenue	Thirtieth	Douglas avenue	C. & G. cedar blocks	3,096.49
Indiana avenue	Twenty-second	Twenty-ninth	C. & G. cedar blocks	3,901.92
Indiana avenue	Twenty-ninth	Thirtieth	C. & G. cedar blocks	809.00
Indiana avenue	Douglas avenue	Egan avenue	C & G. cedar blocks	2,582.75
Irving avenue	Jackson	Van Buren	C. & F. cedar blocks	480.76
Jackson	State	Fifth avenue	Iron Granite blocks	268.93 1,059.90
Jane	Ashland avenue	Milwaukee avenue	C. & F. cedar blocks	501.16
Johnson	Fourteenth	Wright	G. cedar blocks	377.47
Judd	Canal	Jefferson	G. cedar blocks	727.67
Kedzie avenue	Canal bridge	W. fork S. br. Chicago Riv.	Cinders	2,300.00
*Kinzie	Canal	Clinton	Granite blocks	323.06
Kramer	Jefferson	Halsted	C. & G. cedar blocks	1,150.91
Lake	Central avenue	S. branch river	Granite blocks	3,154.13
La Salle	Randolph	Adams	Repave—cedar blocks	1,531.26
Larrabee	Chicago avenue	Division	C. & F. cedar blocks	2,599.31
Lawndale avenue	Ogden avenue	Twenty-sixth	C. & G. cedar blocks	3,224.23
Lexington	De Kalb	Leavitt	C. & F. cedar blocks	760.38
Lincoln	Congress	Polk	Cedar blocks	1,026.50
Lincoln place	Sophia	Webster avenue	C. & G. cedar blocks	597.46
Loomis	Twelfth	Fourteenth	F. cedar blocks	1,126.34
Lytle	Macallister place	Gilpin place	C. and cedar blocks	297.78
Madison	California avenue	Homan avenue	C. & F. cedar blocks	4,014.43
Marshfield avenue	Harrison	Polk	Cedar blocks, C. and F.	870.89
Miller	Polk	Taylor	Cedar blocks	797.56
Miller	Harrison	Taylor	C. and G.	1,634.90

Milwaukee avenue	North avenue	Western avenue	C. & F. cedar blocks	3,511.74
Mohawk	North avenue	Clybourn avenue	C. & F. cedar blocks	1,910.85
Morgan place	Morgan	Aberdeen	C. & G. cedar blocks	646.80
Morgan	Indiana	Milwaukee avenue	C. & F. cedar blocks	320.58
Morgan	Milwaukee avenue	Chicago avenue	C. & F.	578.76
Nebraska	Throop	Loomis	C. & F. cedar blocks	600.00
Newberry avenue	Twelfth	Maxwell	Cedar blocks	820.80
Newberry avenue	Fourteenth	Wright	C. & F.	380.00
Nixon	Polk	Taylor	Curbing	495.60
Noble	Austin avenue	Indiana	C. cedar blocks	315.13
Ohio	Green	Desplaines	C. cedar blocks	1,039.25
†Ohio	Milwaukee avenue	Ashland avenue	C. & F. cedar blocks	1,798.00
Ontario	St. Clair	600 feet east	Cedar blocks	298.15
Park avenue	Fall	California avenue	C. & F. cedar blocks	1,074.11
Paulina	Twelfth	Fifteenth	C. & F.	1,818.00
Peoria	Madison	Randolph	Cedar blocks	804.02
Peoria	Randolph	Indiana	C. and cedar blocks	1,762.81
Peoria	Madison	Van Buren	Cedar blocks	1,580.13
Peoria	Van Buren	Harrison	Cedar blocks	689.42
Polk	Loomis	Robey	C. & F. cedar blocks	3,605.88
†Portland avenue	Archer avenue	Twenty sixth	C. & F. cedar blocks	1,630.25
Prospect place	Vincennes avenue	Cottage Grove avenue	C. & G. cedar blocks	418.05
Prairie avenue	Thirty-third	Douglas avenue	C. & G. macadam	1,266.38
Prairie avenue	Douglas avenue	Egan avenue	C. & G. macadam	2,589.14
*Quincy	Franklin	Fifth avenue	Granite blocks	324.70
Rees	Halsted	Larrabee	Cedar blocks	1,233.28
Robey	Chicago avenue	Division	C. & F. cedar blocks	2,599.47
Robey	Harrison	Ogden avenue	C. & F. cedar blocks	217.25
Robey	Indiana	Chicago avenue	C. Cedar blocks	1,641.88
Robey	North avenue	Armitage road	C. & F. cedar blocks	2,576.11
Rundell place	Morgan	Aberdeen	Wd. Cb. & G. cedar blocks	662.37
Rush	North Water	Illinois	Cedar blocks	421.79
Sangamon	Milwaukee avenue	Chicago avenue	C. & F. cedar blocks	980.80
Sanger	Archer avenue	Twenty sixth	Cedar blocks	1,020.04

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* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Scott	150 feet east of State	Stone	Cedar blocks	565.25
*Scott	Stone	Lake shore drive	Sheet asphalt	118.50
Sedgwick	Chicago avenue	Division	F. cedar blocks	2,493.06
St. Clair	Indiana	Superior	C. & F.	1,402.00
St. Clair	Superior	Ontario	Cedar blocks	805.22
St. Clair	Ontario	Indiana	C. & cedar blocks	678.83
Taylor	Leavitt	Campbell avenue	C. & F. cedar blocks	1,801.87
†Taylor	Ashland avenue	Ogden avenue	C. & F. cedar blocks	2,510.16
Thirteenth	Blue Island avenue	Ashland avenue	Cedar blocks	2,968.88
Thirteenth	Ashland avenue	Wood	C. & F.	1,202.00
†Thirteenth place	Blue Island avenue	Ashland avenue	C. & F.	3,260.00
Thirtieth	State	Prairie avenue	Cedar blocks	1,461.82
Thirty-seventh	State	Grand boulevard	C. & G. macadam	2,268.98
Thirty-second court	Cottage Grove avenue	Lake Park avenue	Cedar blocks	467.02
Throop	Taylor	Blue Island avenue	Cedar blocks	2,847.07
Twenty seventh	South Park avenue	East line Johnson avenue	Cedar blocks	729.16
Twenty-ninth	Groveland Park avenue	Lake Park avenue	Cedar blocks	248.50
Union	Erie	Carroll avenue	C. W. & F. cedar blocks	1,607.72
Walnut	Albany avenue	Kedzie avenue	C. & F.	617.90
Wabash avenue	Harrison	Twelfth	Granite blocks	2,557.67
Waller	Twelfth	Fourteenth	C. & F.	1,268.02
Warren avenue	Rockwell	Sacramento avenue	Cedar blocks	2,621.99
Warren avenue	Sacramento avenue	Homan avenue	Cedar blocks	2,716.51
Warren avenue	Rockwell	Homan avenue	C. & F.	5,888.50
Washington	Dearborn	Franklin	Granite blocks	1,861.88
Wells	Chicago avenue	Division	F. & cedar blocks	2,495.08
Wells	Ohio	Illinois	F. & cedar blocks	500.80
Wells	Chicago avenue	Kinzie	F. & cedar blocks	2,051.68
Wendell	Wells	Eastern terminus	C. & cedar blocks	219.80
Winthrop place	Polk	Taylor	C. & F.	795.40

Wright	Canal	Halsted	C. cedar blocks	1,757.75
York	Laflin	Ashland avenue	C. and F.	563.70
Total number of lineal feet				218,750.40
Number of miles, 41.43.	Less 4.68 miles curbing and	filling		36.75
1888				
Alley bet. Cottage Grove & Ellis Park aves	Thirty-sixth	Thirty-seventh	Cedar blocks	462.00
***Alley bet. Michigan and Wabash aves.**	Lake	Randolph	Granite blocks	120.50
Alley bet. Groveland and Lake Park aves	Thirty-second	Thirty-third	Cedar blocks	619.89
***Alley bet. Randolph and Washington**	Franklin	Market	Granite blocks	150.00
Alley bet. Prairie and Calumet aves	Twenty-first	Twenty-second	Cedar blocks	424.90
Alley bet. Michigan and Indiana aves.	Thirty-first	**100 feet north of Thirty-second**	Cedar blocks	528.50
Alley bet. Cottage Grove & Groveland Pk av	Thirty-second	Thirty-third	Cedar blocks	541.50
Alley bet. Fifth avenue and Sherman	Van Buren	Harrison	Cedar blocks	808.97
Alley bet. Indiana and Prairie avenues	Twenty-sixth	Twenty-ninth	Cedar blocks	1,528.00
Alley bet. Michigan and Indiana aves.	Twenty-sixth	Twenty-ninth	Cedar blocks	1,486.00
Alley between Clark and Dearborn	Goethe	Schiller	Cedar blocks	687.60
Alley between Superior and Huron	Cass	State	Cedar blocks	193.80
Alley between Ohio and Indiana	La Salle avenue	Rush	Cedar blocks	1,471.29
Alley N. block 3, Union Park addition	Bishop court	Sheldon	Cedar blocks	325.11
Alley N., E. and W., south of Randolph	Curtis	May	Cedar blocks	258.00
Alley north ½ block 53	Robey	Hoyne avenue	Cedar blocks	299.50
Alley north and south in block 36	Congress	Harrison	Cedar blocks	330.00
Alley block 69, old town	Union	Meridian	Cedar blocks	198.00
Alley block 2, Union Park addition	Sheldon	East line lots 1 and 10, blk 2	Cedar blocks	274.60
Alley blk. 49, bet. Park av. & W. of La Salle	North and south alley	Paulina	Cedar blocks	460.16
Alley	Bismark court	Huron	Cedar blocks	180.85
Alley north of Ohio and east of Rush			Cedar blocks	138.00
Alley west 120 feet block 142			Granite blocks	120.50
Adams	Rockwell	Sacramento	Cedar blocks	2,747.84
Aberdeen	Taylor	Eleventh	Cedar blocks	370.88
Alexander	Wentworth avenue	Stewart avenue	Cedar blocks	1,471.29
Arthington place	Center avenue	Lytle	Cedar blocks	358.22

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* Private contract.   † Unfinished.

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Artesian avenue	Lake	P., C. & St. L. R'y at Kinzie	Cedar blocks	1,217.00
Armitage avenue	Elston avenue	Western avenue	Curbing and filling	5,000.00
Ashland avenue	West Twenty-second	Chicago River	Planking	2,465.00
Ashland avenue	Archer avenue	Egan avenue	Curbing and filling	5,000.00
Belden avenue	Cleveland avenue	Halsted	Cedar blocks	1,865.05
Bismark court	Noble	Eastern terminus	Cedar blocks	1,058.14
Blue Island avenue	Ashland avenue	Western avenue	Cedar blocks	5,848.17
Blackhawk	Sedgwick	Halsted	Cedar blocks	2,688.14
Boston avenue	Desplaines	Halsted	Cedar blocks	806.00
Brigham	Ashland avenue	Wood	Cedar blocks	1,262.11
Brown	Fourteenth	Wright	Cedar blocks	891.02
Bryson	Lincoln	Robey	Cedar blocks	688.00
Bickerdike	Indiana	Ohio	Cedar blocks	485.81
Bickerdike	Ohio	Chicago avenue	Cedar blocks	1,210.46
Bradley	Holt	Elston avenue	Cedar blocks	1,170.60
Burling	Webster avenue	Belden avenue	Cedar blocks	595.15
Burling	North avenue	Willow	Filling intersections	
Burling	Willow	North avenue	Cedar blocks	1,006.18
Butterfield	Thirtieth to Thirty-third and from	Thirty-fifth to Egan avenue	Cedar blocks	4,620.00
*Butterfield	Thirty-third	Thirty-fifth	Curbing	1,890.00
Canal	Sixteenth street viaduct	Eighteenth	Cedar blocks	899.40
Canal	Twelfth	Sixteenth	Cedar blocks	2,476.72
Carpenter	Washington	Madison	Cedar blocks	416.25
Canal	Madison	Lake	Granite blocks	1,867.98
Canal	Van Buren	Harrison	Cedar blocks	859.25
Carl	Wells	La Salle avenue	Cedar blocks	858.69
Center	Halsted	Racine avenue	Cedar blocks	2,819.01
Chestnut	State	Rush	Cedar blocks	880.41
Chase	Chicago avenue	Cornell	Cedar blocks	552.52
Cicero court	Congress	Harrison	Cedar blocks	861.86
Cleaver	Milwaukee avenue	Bradley	Cedar blocks	1,171.46

Clinton	Milwaukee avenue	Kinzie	Cedar blocks	356.84
Cork	Ashland avenue	Paulina	Curbing and grading	600.80
Congress	Western avenue	Campbell avenue	Cedar blocks	619.90
Colorado avenue	Madison	Jackson	Cedar blocks	2,909.84
Crittenden	Noble	Currier	Cedar blocks	591.67
N. Clark	Chicago avenue	Chicago River	Cedar blocks	3,396.16
Dearborn	Sixteenth	Twenty-second	Cedar blocks	2,428.00
Dearborn	Adams	Monroe	Granite blocks	436.19
Dearborn	Madison	Washington	Granite blocks	895.96
*Dearborn	Kinzie	North Water	Cedar blocks	537.80
Desplaines	Carroll	Monroe	Cedar blocks	2,698.70
Division	Lincoln	Western avenue	Cedar blocks	3,560.52
Douglas avenue	South branch river	Archer avenue	Cedar blocks	5,684.84
West ½ Egan avenue	State	Wentworth avenue	Cedar blocks	1,284.00
Eighteenth	Wabash avenue	Fifth avenue	Cedar blocks	1,444.90
Eleventh	Morgan	May	Curbing and filling	959.70
Elm	La Salle avenue	Clark	Cedar blocks	845.55
Erie	St. Clair	600 feet east	Cedar blocks	609.20
Fifth avenue	Twenty-sixth	Thirty-first	Cedar blocks	2,715.77
Fifth avenue	Polk	Taylor	Cedar blocks	796.17
West Fifteenth	Canal	Halsted	Curbing and filling	
West Fifteenth	Center avenue	Ashland avenue	Cedar blocks	2,171.50
West Fifteenth	Canal	Halsted	Cedar blocks	1,695.90
West Fifteenth	Ashland avenue	Wood	Cedar blocks	1,280.18
West Fifteenth	Ashland avenue	Center avenue	Curbing and filling	
West Fifteenth	Ashland avenue	Wood	Curbing and filling	
Flournoy	Western avenue	Campbell avenue	Curbing and filling	596.80
Flournoy	Campbell avenue	Rockwell	Curbing and filling	637.53
Frank	Waller	Blue Island avenue	Curb wall and filling	
Frank	Waller	Blue Island avenue	Cedar blocks	1,011.55
Fourteenth	Ashland avenue	Wood	Cedar blocks	1,309.58
Fry	Center avenue	Noble	Cedar blocks	1,308.02
Fox place	Elston avenue	Chicago & North-Western Ry	Cedar blocks	457.51
Franklin	Schiller	North avenue	Cedar blocks	1,259.69

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* Private contract.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
Franklin	Sigel	Schiller	Cedar blocks	307.00
Fremont	Center	Belden avenue	Curbing	2,001.66
South ½ Fullerton avenue	Halsted	Clark	Cedar blocks	2,201.82
†Franklin	Lake	Madison	Granite blocks	833.80
Forrest avenue	Douglas avenue	Egan avenue	Macadam	2,549.30
George	Elston avenue	Carpenter	Cedar blocks	579.05
Gilpin place	Sibley	Loomis	Cedar blocks	390.18
Green	Van Buren	Harrison	Cedar blocks	692.00
Gross Terrace	Madison	Colorado avenue	Cedar blocks	507.24
Gurley	Blue Island avenue	May	Cedar blocks	1,787.72
Hammond	Menomonee	Wisconsin	Cedar blocks	636.44
Halsted	Division	North branch Chicago River	Cedar blocks	1,122.85
Halsted	Division	Clybourn avenue	Cedar blocks	2,484.48
Halsted	Clybourn avenue	Fullerton avenue	Cedar blocks	3,866.11
Halsted	Twenty-second	South branch Chicago River	Cedar blocks	1,127.78
Hasting	Ashland avenue	Wood	Curbing and filling	1,200.00
Henry	Blue Island avenue	Ashland avenue	Cedar blocks	2,384.41
Henry	Morgan	Blue Island avenue	Cedar blocks	1,467.41
Hermitage avenue	Polk	Twelfth	Cedar blocks	1,579.58
North Halsted	Indiana	Chicago avenue viaduct	Cedar blocks	1,867.69
Hinman	Robey	Blue Island avenue	Curb wall and filling	2,775.00
Hunt	Center avenue	Elizabeth	Cedar blocks	520.08
Hudson avenue	North avenue	Center	Cedar blocks	2,708.55
Hurlbut	Clybourn avenue	North avenue	Cedar blocks	2,225.15
Hudson avenue	Sigel	North avenue	Cedar blocks	1,568.06
Irving avenue	Monroe	Adams	Cedar blocks	416.05
Irving avenue	Van Buren	Harrison	Cedar blocks	774.17
Irving avenue	Polk	Taylor	Cedar blocks	808.20
Jackson	Halsted	Hoyne avenue	Macadam	8,940.14
Jackson	Halsted	Hoyne avenue	Granite blocks	128.60

Jackson	Fifth avenue	240 feet east of market	Granite blocks	517.09
Jackson	Clark	La Salle, excepting 8½ from east side Pacific avenue to east side of La Salle	Granite blocks	248.75
Kedzie avenue	Twenty-sixth	No. branch So. branch Chicago River	Macadam	3,145.00
Kendall	Polk	Taylor	Cedar blocks	1,148.88
Kinzie	Canal	Jefferson	Granite blocks	419.00
Kingsbury	Erie	Chicago avenue	Cedar blocks	928.75
*La Salle	North Water	River and warehouse	Cedar blocks	486.65
Larrabee	Division	North avenue	Cedar blocks	2,638.00
La Salle	Thirty-first	Egan avenue	Cedar blocks	5,193.33
La Salle	Thirty-first	Twenty-sixth	Cedar blocks	2,604.53
La Salle	Monroe	Adams	Granite blocks	411.60
Lake	Western avenue	Rockwell	Cedar blocks	1,893.17
Lake	Rockwell	Homan avenue	Cedar blocks	5,458.99
Laflin	Twelfth	Fourteenth	Cedar blocks	1,106.55
Laflin	Twelfth	Fourteenth	Curbing and filling	
Law	Harrison	Polk	Cedar blocks	796.09
Lee place	Robey	Hoyne avenue	Cedar blocks	604.76
Lexington	Western avenue	Campbell avenue	Cedar blocks	625.21
Leavitt	Lake	Chicago avenue	Cedar blocks	3,845.93
Lexington	Campbell avenue	Rockwell	Cedar blocks	598.02
Lincoln avenue	Wells	Centre	Cedar blocks	1,563.20
Loomis	West Fourteenth	Blue Island avenue	Curbing and filling	1,414.18
Loomis	West Eighteenth	West Twenty-first	Cedar blocks	1,019.33
Lytle	Taylor	Gilpin place	Cedar blocks	688.17
Lytle	Taylor	Gilpin place	Curbing and filling	
Market	Schiller	North avenue	Cedar blocks	785.36
Marion place	Division	Ellen	Cedar blocks	1,212.12
*Maple	La Salle avenue	West terminus	Cedar blocks	117.30
Madison	Dearborn	Eighty feet east	Granite blocks	83.72
Margaret	West Fourteenth	West Fifteenth	Curbing and filling	
Margaret	Fourteenth	Fifteenth	Cedar blocks	548.15
Marshfield	Polk	Twelfth	Cedar blocks	1,594.04

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* Private contract. † Unfinished.

IMPROVEMENT OF STREETS FROM 1885 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
McReynolds	Wood	Paulina	Cedar blocks	617.57
Menomonee	Clark	Sedgwick	Cedar blocks	1,180.95
Morgan	Fourteenth	Wright	Curbing and filling	
Miller	Gurley	Polk	Cedar blocks	375.84
Miller	Gurley	Harrison	Cedar blocks	408.50
Michigan avenue	Jackson	Chicago River	Granite blocks	3,784.11
Morgan	Kinzie	Indiana	Cedar blocks	694.75
Monroe	Robey	Oakley avenue	Cedar blocks	1,918.79
Morgan	Fourteenth	Wright	Cedar blocks	376.81
Newberry avenue	Fourteenth	Wright	Cedar blocks	896.48
Oak	Clark	Dearborn avenue	Cedar blocks	881.79
Oakley avenue	Kinzie	Indiana	Cedar blocks	781.18
Ogden avenue	Ashland boulevard	Paulina	Cedar blocks	588.19
Ohio	Milwaukee avenue	Ashland avenue	Cedar blocks	3,077.00
Ohio	Lincoln	Ashland avenue	Cedar blocks	1,842.82
Ontario	St. Clair	600 feet east	Cedar blocks	628.27
Orchard	North avenue	Fullerton avenue	Cedar blocks	5,085.68
Park avenue	Leavitt	Western avenue	Cedar blocks	1,802.61
Park avenue	Lincoln	Wood	Cedar blocks	402.88
Paulina	Twelfth	Fifteenth	Cedar blocks	1,900.00
Pearson	Wells	Western terminus	Curb wall	
Pine	Superior	Chicago avenue	Cedar blocks	288.70
Plum	Loomis	Laflin	Curbing and filling	
Plum	Loomis	Laflin	Cedar blocks	599.87
Polk	Western avenue	Campbell avenue	Cedar blocks	769.25
Polk	Ellsworth avenue	Viaduct	Cedar blocks	854.00
Pratt place	Hoyne avenue	Western terminus	Cedar blocks	475.21
Pratt	Morgan	Sangamon	Cedar blocks	854.85
Portland avenue	Archer avenue	Twenty-sixth	Cedar blocks	2,692.79
Randolph	Wabash avenue	Michigan avenue	Granite blocks	880.46
Randolph	Clark	South branch Chicago River	Granite blocks	1,889.52

Rose	Chicago avenue	Cornell	Cedar blocks	622.85
Rumsey	Chicago avenue	Division	Curbing and filling	
Rumsey	Chicago avenue	Division	Cedar blocks	2,599.86
Rush	Illinois	Ohio	Cedar blocks	806.03
Samuel	Chicago avenue	Division	Cedar blocks	2,614.95
Sebor	Desplaines	Halsted	Cedar blocks	829.53
Shober	North avenue	Wabansia avenue	Cedar blocks	619.00
Sherman place	Pine	East line lot 11, Butler's sub-division	Cedar blocks	162.84
Sigel	Sedgwick	Cleveland avenue	Cedar blocks	625.75
Sibley	Gilpin place	Macallister place	Cedar blocks	284.08
Snell	Chicago avenue	West Huron	Cedar blocks	601.00
Stanton	Madison	Lake	Cedar blocks	1,148.83
*Steward	Sixteenth	Eighteenth	Granite blocks	512.00
State	Chicago avenue	Chicago River	Cedar blocks	8,507.19
St. Clair	Indiana	Michigan	Cedar blocks	1,088.22
Superior	Noble	Wood	Cedar blocks	2,434.58
Seymour	Lake	Railroad ground to Kinzie	Cedar blocks	1,090.73
Temple	Huron	Chicago avenue	Cedar blocks	600.33
Taylor	Ashland Boulevard	Ogden avenue	Cedar blocks	1,644.09
Thirteenth place	Blue Island avenue	Ashland Boulevard	Cedar blocks	3,110.26
West Thirteenth	Ashland Boulevard	Wood	Cedar blocks	1,821.25
Thirteenth place	Blue Island avenue	Waller	Cedar blocks	510.36
Thirteenth place	Blue Island avenue	Waller	Curbing and filling	
Thirteenth place	Ashland avenue	Wood	Curbing and filling	1,201.80
West Thirteenth	Waller	Blue Island avenue	Cedar blocks	685.07
West Thirteenth	Waller	Blue Island avenue	Curbing and filling	
West Thirteenth	Wood	Ogden avenue	Curb wall and filling	4,805.00
Third avenue	Twelfth	Fourteenth	Granite blocks	1,217.18
Tower place	Chicago avenue	Pearson	Cedar blocks	219.00
Thirty-fourth	State	Butterfield	Macadam	546.03
Twentieth	Wabash avenue	Calumet avenue	Macadam	1,573.96
Twenty-sixth	California avenue	Kedzie avenue	Macadam	2,640.00
West Twenty-first	Centre avenue	Blue Island avenue	Cedar blocks	2,273.82
West Twenty second	Ashland avenue	Western avenue	Cedar blocks	5,496.77

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* Private contract.

IMPROVEMENT OF STREETS FROM 1835 TO DATE—CONTINUED.

Name of Street and What Year.	FROM	TO	Nature of Improvement.	Lineal Feet.
West Twenty second	Western avenue	Blue Island avenue	Curb wall and filling	
West Twentieth	Ashland avenue	Blue Island avenue	Cedar blocks	639.52
West Twelfth	Ashland boulevard	Ogden avenue	Curbing and filling	4,683.20
West Twelfth	Ogden avenue	California avenue	Curbing and filling	500.00
Van Buren	Wabash avenue	Fifth avenue	Granite blocks	2,156.46
Vedder	Division	Halsted	Curbing and filling	
Vedder	Division	Halsted	Cedar blocks	2,098.87
Vine	North avenue	Willow	Cedar blocks	1,006.26
Wallace	Archer avenue	Thirty-first	Cedar blocks	4,290.03
South Water	Fifth avenue	Lake	Granite blocks	915.02
Wallace	Thirty first	Thirty ninth	Curbing and filling	5,000.00
Waller	Twelfth	Fourteenth	Cedar blocks	1,271.45
Wade	Elston avenue	Crittenden	Cedar blocks	1,394.76
Wells	Division	North avenue	Cedar blocks	2,693.31
Wells	Kinzie	Chicago River	Cedar blocks	267.16
Wells	North avenue	Clark	Cedar blocks	2,062.88
Western avenue	Ogden avenue	Twenty second	Curbing and filling	1,300.00
Western avenue	Twenty-second	Twenty-sixth	Curb wall and filling	2,557.00
Whiting	Market	Western terminus	Curb wall and filling	223.90
Wisconsin	Sedgwick	Larrabee	Curbing	1,124.00
Wilcox avenue	Chicago&North WesternRy	Sacramento	Curbing and filling	
Wilcox avenue	Rockwell	Sacramento	Cedar blocks	2,685.15
Winthrop place	Polk	Taylor	Cedar blocks	809.87
Wright	Halsted	Western terminus	Cedar blocks	1,336.95
Wood	Twelfth	Fifteenth	Curbing and filling	1,477.90
Wright	Halsted	Western terminus	Curbing and filling	
York	Laflin	Ashland avenue	Cedar blocks	578.57
Paving on viaducts and	approaches			5,969.86
Total number of lineal feet				329,947.20
Number of miles, 62.49.	Less 8.16 miles curbing and	filling		54.33

The total number of miles of pavement laid each year, from the introduction of street paving in 1855 to the present date, is given in the following review :

Year.	Number of Miles.	Year.	Number of Miles.	Year.	Number of Miles.
1855	1.72	1867	11.37	1879	6.83
1856	.26	1868	5.46	1880	16.84
1857	2.62	1869	18.32	1881	24.52
1858	7.20	1870	19.96	1882	24.95
1859	5.70	1871	25.63	1883	22.49
1860	....	1872	1.82	1884	34.52
1861	.69	1873	10.19	1885	38.06
1862	2.57	1874	9.07	1886	43.66
1863	2.00	1875	11.49	1887	36.75
1864	2.40	1876	10.50	1888	54.33
1865	2.03	1877	12 29		
1866	8.87	1878	11.01	Total No. of miles....	486.12

NOTE.—Of this amount 137.59 miles have been repaved during the same period, which reduces the actual amount of improved Streets within the corporate limits at this date to 348.53 miles.

Respectfully submitted.

GEO. W. DEAL,

Superintendent of Streets.

REPORT

OF THE

Telegraph Department

CITY OF CHICAGO.

CITY TELEGRAPH DEPARTMENT.

CHICAGO, December 31, 1888.

GEO. B. SWIFT, Esq.,
Commissioner of Public Works.

DEAR SIR:—The electric light plant which was installed at the corner of Washington and Clinton streets, at the close of the preceding year, to light the river, bridges and viaducts, was duly completed, and has been in continuous operation since. Several changes in the plant connections and lights have been caused by the reconstruction of bridges and viaducts. Notwithstanding which, the plant has given entire satisfaction.

Encouraged by the above experiment, it was decided to install a street lighting plant which has just been completed. The power station is located at 195 South Jefferson street, in the quarters formerly occupied by Hook and Ladder Company No. 2, and is equipped with one 400-horse power engine, four boilers with Murphy furnaces attached, eight 30-light dynamos of the Western Electric pattern, and one sixteen circuit switchboard with latest improvements. The interior is wired in a manner conducive to the best results.

One hundred and seventy-nine street lamp posts of very neat design, each with 2,000 candle power double carbon arc lamp attached, were placed on the following streets:

Five on West Washington street, from Canal to Clinton streets; five on East Washington street, from Market street to Fifth avenue; sixty on West Madison street, from river to Ashland boulevard; twenty-four on East Madison street, from river to Michigan avenue; six on East Van Buren street, from Fifth avenue to river; eleven on West Van Buren street, from river to Halsted street; six on La Salle street, from Adams to Washington street; twenty-five on Michigan avenue, from river to Jackson street; twelve on Desplaines street, from Van Buren to Randolph street; twelve on Halsted street, from Van Buren to Madison street; four on East Randolph street, from Market to Franklin street; three on Ashland avenue, from Ogden avenue to Washington boulevard; three on Fifth avenue, from Van Buren to Washington street; one on the east side of Dearborn street, between Madison and Monroe streets; one on the east side of Franklin street, between Randolph and Washington streets; one in front of power station. Total 179. Three of above are placed in engine houses, and one in the power station.

Thirty-five miles of cable of high insulation and conductivity were laid underground, and 24½ miles of substantial conduits, which include fifty-three manhole chambers and 108 hand-holes.

Power was applied to the plant December 24, and the rays of 358,000 candle power were substituted for 9,120 candle power furnished by gas lights displaced.

Total number of lamps placed on streets...	175
Total number of lamps placed on river.....	104
Grand total....................	279

Number of lamps placed on river where no gas displaced........................	29
Number electric lights placed, displacing gas	250
Total number of gas lamps displaced.......	799
Candle power of 799 gas lamps, 16 C. P. each,	12,784
Candle power of 250 arc lamps, 2,000 C. P. each	500,000

One arc lamp displaces $3\frac{2}{10}$ gas lamps.

The displacement of gas lights because of electric lights confined to trunk lines, is not as great as it would be if a section of one mile was lighted, permitting the rays of one light to intermingle with another. I am more than satisfied that the displacement of gas lights by the systematic placing of arc lights would be one arc light to five gas lights.

The introduction of the system was highly satisfactory and beyond expectation. The work of transferring the river plant and connecting it with the new station is now in progress and will be soon completed, so that the power for both plants will be supplied from one station.

November 1, an incandescent electric light plant of 240 light capacity was installed in the North Side water works. One hundred and seventy-eight 16-candle power lamps were distributed in the works; a cable was placed in the tunnel and the lighthouse on the new shore inlet, about 700 feet from the shore at the foot of Pearson street, connected with plant and furnished with twenty-four 32-candle power lamps, placed in circular form in the cupola, with reflectors. A 700-pound fog bell was also placed on the lighthouse and operated by one 4-horse power electric motor, which is set to strike eight blows per minute. The light can be seen for a distance of ten miles.

The arrangement for controlling the light and the fog bell is a very simple and novel device. In front of the dynamo two switches are placed, one for the light and one for the fog bell motor. They can be worked individually or together.

This, I believe, is the first instance of incandescent light being employed in lighthouse or for fog bell motor. The plant, as installed, gives entire satisfaction.

Respectfully submitted,

J. P. BARRETT,

Superintendent.

COST OF CITY ELECTRIC LIGHT PLANT, EXCLUSIVE OF RIVER PLANT.

8 30-light dynamos, $12.60 each	$10,080 00
180 double carbon lamps, $33.75 each	6,075 00
180 lamp hoods, $18.00 each	3,240 00
Switch board	217 00
34½ miles cable, per mile, $736.32	25,403 24
177 lamp posts	2,412 88
Excavations, repairing pavement, removing dirt etc	11,000 00
Tools, repairing tools, miscellaneous supplies	626 27
Labor, laying pipe, setting posts, pulling in cable	8,343 18
53 man-holes, 108 hand-holes, tunnel work	12,900 35
24½ miles pipe, per mile, $475.20	12,254 41
Total	$92,552 33
Less 25 per cent. for fire alarm work	23,138 08
Total	$69,414 25
Less cost of connecting river plant to new plant	6,421 25
Total	$62,993 00
Cost per lamp	$351 91

Estimated expense of 300-light plant, run all night, every night in the year, averaging ten hours per night.

Two engineers	$ 2,400 00
One dynamo attendant	1,000 00
Three firemen	1,800 00
One oiler	600 00
Six trimmers	3,600 00
Coal	7,000 00
Carbons	2,500 00
Oil, waste, rags	600 00
Breakage of globes	300 00
Total	$19,800 00

Average cost, per lamp, per year, $66.00.
Average cost, per lamp, per night, 18c. or 19c.

Respectfully submitted,

J. P. BARRETT,
Superintendent.

REPORT

ON

Bureau of Maps

CITY OF CHICAGO.

MAP DEPARTMENT.

CHICAGO, January 18, 1889.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR:—I respectfully submit herewith in tabular form a statement of streets in Section 36, provided with house numbers, where the owners of said buildings have been duly notified of their respective numbers, also the names of streets in which the house numbers are corrected and the owners of the buildings advised to correct their numbers.

NEW STREET NUMBERS IN SECTION 36.

Armitage avenue, from Western avenue to Kedzie avenue.

Alice place, from Powell avenue to Perry avenue.

Attrill, from Stave to Milwaukee avenue.

Armitage court, from Clarkson avenue to Kedzie avenue.

Bingham, from Armitage avenue to Cornelia.

Bloomingdale road, from Western avenue to Rockwell.

Berlin, from Myrtle avenue to California avenue.

Bremen, from Myrtle avenue to Cromwell.

Basil avenue, from North avenue to Bloomingdale road.

Byron avenue [illegible] Humboldt to Humboldt boulevard.

Cortland, from [illegible] ue to Kedzie avenue.

Cherry [illegible] nue to Perry avenue.

Clara [illegible] ue to Perry avenue.

Cromw [illegible] ukee avenue to Fullerton avenue.

Cornelia, from Point to Milwaukee avenue.

Channay, west of Point.

California avenue, from North avenue to Milwaukee avenue.

Clarkson avenue, from Bloomingdale road to Palmer Place boulevard.

Courtland court, north side of street, from Clarkson avenue to Kedzie avenue.

Dania avenue, from North avenue to Bloomingdale road.

Dickens avenue, south side of street, from Humboldt to Humboldt boulevard.

Edbrook place, from Powell avenue to Perry avenue.

Fullerton avenue, from Western avenue to Leddy.

Francis place, from Point to California avenue.

Follansbee, from Thomas avenue to Leddy.

Fairfield avenue, from North avenue to Cortland.

Gross avenue, from North avenue to Bloomingdale road.

Hoffman avenue, from Milwaukee avenue to Fullerton avenue.

Homer, from Western avenue to Washtenaw avenue.

Henry court, north of Point.

Humboldt, from North avenue to Armitage avenue.

Heine, from North avenue to Armitage avenue.

Humboldt boulevard, from North avenue to Armitage avenue.

Julia court, southeast of Stave.

Johnston avenue, from California avenue to Kedzie avenue.

Kedzie avenue, from North avenue to Armitage court.

Maplewood avenue, from North avenue to Bloomingdale road.

Moffat, from Western avenue to Rockwell.

Maple place and Jefferson court, from Western avenue to Perry avenue.

Myrtle avenue, from Milwaukee avenue to Bremen.

Mozart, from North avenue to Palmer avenue.

Milwaukee avenue, from Western avenue to Fullerton avenue.

Mitchell avenue, from North avenue to Bloomingdale road.

McGovern, from Milwaukee avenue to Thomas avenue.

North avenue, [illegible]e, f[illegible] Western avenue to Kedzie avenue.

Norman [illegible] venue to Bloomingdale road.

Nebrask[illegible] ingdale road to Palmer Place t[illegible]

Powell Pa[illegible] [illegible]tern [illegible]enue to Powell avenue.

Powell avenue, from Milwaukee avenue to Fullerton avenue.

Pleasant place, from Powell avenue to Perry avenue.

Perry avenue, from Powell avenue to Clara place.

Point, from Armitage avenue to California avenue.

Prindiville, from Stave to Milwaukee avenue.

Palmer avenue, from California avenue to Thomas avenue.

Palmer Place boulevard, from Thomas avenue to Kedzie avenue.

Rhine, from Myrtle avenue to Milwaukee avenue.

Rockwell, from North avenue to Armitage avenue.

Seymour avenue, from North avenue to Armitage avenue.

St. Helena, southwest of Stave.

St. George's court, from Stave to Milwaukee avenue.

Shakespeare avenue, north side, from Humboldt to California avenue.

Thomas avenue, from Palmer avenue to Johnston avenue.

Stave, from Armitage avenue to California avenue.

Western avenue, from North avenue to Fullerton avenue.

Washtenaw avenue, from North avenue to Cortland.

NUMBERS CORRECTED ON THE FOLLOWING STREETS:

Adams, north side, west of Loomis.

Aberdeen, east side, from Congress to Harrison.

Delaware place, from Dearborn avenue to State.

Dearborn avenue, east side, from Chestnut to Delaware place.

Elizabeth, from Randolph to Lake.

Fremont, from Center to Garfield avenue.

Forest avenue, west side, from Thirty-sixth to Thirty-seventh.

Franklin, from Jackson to Harrison.

Hoyne avenue, from Wilmot avenue to Armitage avenue.

Irving place, from Fulton to Kinzie.

Larrabee, south side, from Center to Garfield avenue.

Lake avenue, south of Thirty-first.

La Salle avenue, west side, from Indiana to Ohio.

Marshfield avenue, east side, from Van Buren to Congress.

Madison, north side, from Elizabeth to Waverly place.

Ontario, south side, from State to Dearborn avenue.

State, east side, from viaduct to Kinzie.

Spring, south side, from La Salle to Wentworth avenue.

Twelfth, north side, from Illinois Central R. R. tracks to Michigan avenue.

Thirty-sixth, from Gage to Laurel.

Wilcox avenue, north side, west of California avenue.

The following number of Maps and Plats for the several departments have been made during the year 1888:

New subdivisions	245
For lamp posts	1,368
For opening and widening of streets	528
For sidewalk maps	339
For law department	145
Miscellaneous	174
Total	2,799

A complete map of the City of Chicago has also been drawn.

In addition to the above the following plats have been furnished the City Electrician, Professor Barrett.

Thirty-five sheets, containing Sections 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 31, 32 and 33, embracing the following territory: "Western avenue to Lake Michigan and from Fullerton avenue to Twenty-second street;" also six sheets consisting of the following Sections: 8, 9, 10, 15, 16 and 17, embracing the following territory: Ashland avenue to Lake Michigan and Chicago avenue to Twelfth street.

Respectfully submitted,

FELIX V. BUSCHICK,
Superintendent of Map Department.

REPORT

ON

Special Assessments

CITY OF CHICAGO.

BUREAU OF
SPECIAL ASSESSMENTS.

CHICAGO, December 31, 1888.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR:—I submit herewith, in tabular form, a statement of Special Assessments made in this department during the past year, with a summary of the estimated cost of the same, also the amount of Special Assessments made in each year during the past twenty-eight years.

STATEMENT OF ASSESSMENTS FOR WOODEN BLOCK PAVEMENT.

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
8321	Girard	Milwaukee avenue	North avenue	$7,232 40
8323	Shober	North avenue	Northern terminus	5,244 10
8324	Wood	North avenue	Armitage avenue	30,348 42
8325	Elston avenue	Armitage avenue	Fullerton avenue	37,311 47
8327	Leavitt	West Lake	West Chicago avenue	24,892 02
8328	Gross Terrace	West Madison	Colorado avenue	3,445 22
8329	Albany avenue	West Madison	Colorado avenue	3,976 91
8331	Carpenter	West Madison	Washington boulevard	2,354 17
8336	Emerson avenue	Leavitt	Oakley avenue	3,979 52
8337	Rush	Illinois	Ohio	4,944 12
8338	North Franklin	North avenue	Menomonee	9,882 70
8340	Marion place	West Division	Ellen	4,875 25
8341	Pratt	Sangamon	Morgan	3,275 90
8365	Ashland avenue	Archer avenue	Egan avenue	35,202 52
8366	North Alley	In block 3	Union Park addition	609 47
8367	Alley	Twenty-first to Twenty-second	between Prairie and Calumet aves.	1,410 09
8378	Alley	Thirty-first to 100 feet north of Thirty-second	between Michigan and Indiana aves.	1,917 48
8383	Winthrop place	West Polk	West Taylor	4,432 32
8384	Marshfield avenue	West Polk	West Twelfth	14,656 39
8392	Gilpin place	Sibley	Loomis	1,942 84
8394	West Madison	Western avenue	Rockwell	5,509 10
8404	Orchard	North avenue	Fullerton avenue	39,116 56
8405	Park avenue	Wood	Lincoln	2,624 44
8406	Sherman place	Pine	Western terminus	849 80
8407	Canal	Sixteenth street viaduct	West Eighteenth	4,076 58
8425	Plum	Loomis	Laflin	3,280 34
8426	Bradley	Holt	Elston avenue	10,050 08
8429	Lexington	Campbell avenue	Rockwell	5,546 10
8449	Oakley avenue	West Kinzie	West Indiana	5,325 60
8450	Racine	Center	Fullerton avenue	18,587 20
8452	Eagle	Desplaines	Halsted	3,358 35

8459	Paulina	West Polk	West Twelfth	18,208 55
8460	Sebor	Desplaines	Halsted	4,356 02
8461	North Franklin	Schiller	North avenue	6,132 96
8462	Blackhawk	Sedgwick	Halsted	14,766 20
8489	Bickerdike	West Indiana	West Ohio	3,502 25
8492	Gurley	Blue Island avenue	May	9,304 03
8493	North Alley	In block 43	Carpenter's addition	797 25
8494	Alley	In north half block 53	C. T. subdivision section 7, 39, 14	1,991 77
8495	Kendall	West Polk	West Taylor	8,635 37
8496	West Fifteenth	Ashland avenue	Wood	7,689 20
8498	Lincoln avenue	North Wells	Center	8,070 32
8527	Hermitage	West Polk	West Twelfth	16,648 50
8528	West Twentieth	Blue Island avenue	Ashland avenue	8,269 58
8550	Blue Island avenue	Ashland avenue	Western avenue	113,136 11
8561	Halsted	West Twenty-second	South branch Chicago River	4,117 96
8563	Alleys	La Salle to Rush	between Ohio and Indiana	5,625 30
8564	West Twenty-second	Ashland avenue	Western avenue	30,644 44
8565	S. ½ Fullerton avenue	Halsted	Southport avenue	12,644 55
8572	North State	Chicago River	Chicago avenue	16,181 81
8576	West Adams	Rockwell	Sacramento avenue	25,437 80
8582	Alley	Goethe to Schiller	**between North Clark and Dearborn avenue**	2,765 47
8585	Desplaines	Carroll avenue	West Monroe	16,601 77
8586	West Twelfth	Ogden avenue	California avenue	46,917 35
8589	Hudson avenue	North avenue	Centre	23,436 77
8590	Vine	North avenue	Willow	6,708 01
8594	West Superior	Noble	Wood	19,239 32
8596	Menomonee	North Clark	Sedgwick	7,247 02
8617	Winchester avenue	West Polk	West Twelfth	18,490 90
8618	Fisk	West Eighteenth	West Twentieth	13,357 83
8627	Fay	West Erie	Pratt	4,340 95
8630	Lee place	Robey	Hoyne avenue	3,582 33
8631	Ogden place	Ogden avenue	Paulina	4,280 53
8632	North Wells	North avenue	North Clark	9,299 77
8633	Chestnut	North Wells	North Market	3,914 46
8634	Halsted	Division	Clybourn avenue	12,999 16
8635	West Monroe	Rockwell	California avenue	11,067 06

STATEMENT OF ASSESSMENTS FOR WOODEN BLOCK PAVEMENT—CONTINUED.

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
8636	Emerald avenue	Archer avenue	Twenty-sixth	$9,203 16
8637	Alley	in S. ½ Block 35	C. T. Subdivision, Sec. 7	1,972 95
8653	Alexander	Wentworth avenue	Stewart avenue	8,288 40
8654	Maple	150 feet west of Dearborn avenue	Western terminus	4,612 80
8655	Nixon	West Polk	West Taylor	3,877 08
8656	South alley	in Block 30	Carpenter's addition	560 17
8657	Augusta	Wood	Robey	9,543 90
8658	Lincoln	West Taylor	West Twelfth	8,546 25
8659	Dayton	North avenue	Willow	14,987 07
8660	Loomis	West Sixteenth	Blue Island avenue	8,341 60
8661	Vedder	Division	Halsted	11,030 56
8663	North Franklin	Sigel	Schiller	1,718 09
8664	Sloan	Noble	Elston avenue	6,307 10
8670	Burling	North avenue	Willow	5,642 50
8673	Robey	Armitage avenue	Fullerton avenue	30,122 07
8674	Elm	North Wells	Sedgwick	7,765 60
8678	Green	Fulton	West Kinzie	7,102 11
8711	Webster avenue	Halsted	Clybourn avenue	34,498 25
8713	Laurel	Thirty-first	Egan avenue	57,409 15
8714	Bickerdike	West Ohio	West Chicago avenue	8,684 15
8724	Union place	West Congress	West Harrison	2,776 75
8725	Gilpin place	Center avenue	Lytle	2,217 81
8726	East and west alley	N. ½ Block 49	C. T. Subdivision, Sec. 7	1,743 54
8737	West Ohio	Lincoln	Robey	4,496 12
8738	Rumsey	West Chicago avenue	West Division	13,760 20
8739	Paulina	West Fifteenth	West Twenty-first	34,798 64
8767	Armour	West Ohio	West Chicago avenue	9,164 75
8768	Carroll avenue	Ada	Elizabeth	3,678 60
8792	Union	West Sixteenth	West Twenty-second	30,188 58
8793	Lytle	Gilpin place	West Taylor	3,631 48
8794	Butterfield	Thirtieth	Egan avenue	37,052 55

8795	California avenue	West Madison	West Harrison	26,017	43
8746	Halsted	Clybourn avenue	Fullerton avenue	18,468	83
8797	Fremont	Willow	Center	12,889	36
8798	California avenue	West Madison	Fulton	14,469	28
8800	Kedzie avenue	Central Park Boulevard	West Van Buren	36,495	02
8824	Clinton	Milwaukee avenue	West Kinzie	3,802	15
8825	Alley	Twenty-sixth to Twenty-ninth	Between Indiana and Prairie avenues	5,194	57
8842	Canal	West Van Buren	West Harrison	5,667	46
8871	Tower place	Chicago avenue	Pearson	1,194	53
8873	Western avenue	Ogden avenue	West Twenty-second	88,443	71
8874	Western avenue	West Twenty-second	West Twenty-sixth	47,365	94
8879	Grant	North Clark	La Salle avenue	1,896	07
8880	Eighteenth	Wabash avenue	Wentworth avenue	9,061	50
8903	Alleys	Block 34	Wolcott's addition	593	13
8904	Alleys	Block 18	Wolcott's addition	1,245	83
8905	Michigan	North Clark	North Wells	9,352	03
8906	St. Clair	Michigan	Indiana	4,309	46
8951	Alley	Canal to Clinton	Between Madison and Monroe	1,147	47
8952	Ingraham	Noble	Chicago & North-Western Railway	4,547	87
8953	West Polk	Western avenue	Campbell avenue	4,873	00
8954	Flournoy	Oakley avenue	Western avenue	3,666	52
8955	Francisco	West Lake	Colorado avenue	9,990	16
8956	Gold	West Harrison	Gurley	3,144	40
8957	Silver	West Harrison	Gurley	2,237	67
8961	Alley	Wisconsin to Garfield avenue	Between Cleveland and Mohawk	8,276	88
8962	Luce	Blackhawk	Northern terminus	3,099	97
8963	Alleys	Twenty-sixth to Twenty-ninth	Bet. Michigan and Indiana avenues	5,816	11
8964	Alley	Block 5	Kinzie's addition	983	28
8965	Twenty-fifth	State	Hanover	29,850	23
8967	Canal	West Eighteenth	Lumber	2,528	05
8968	Sacramento avenue	West Lake	West Van Buren	22,177	16
8969	Lumber	Canal	West Twenty-second	4,678	65
8971	Cleaver	Bradley	Blanche	20,266	84
8973	Holt	West Division	North avenue	33,262	02
8974	Ingraham	Chicago & North-Western Railway	Elston avenue	2,441	75
8975	Avon place	Hoyne avenue	Western terminus	4,412	72

STATEMENT OF ASSESSMENTS FOR WOODEN BLOCK PAVEMENT—Continued.

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
9028	Alleys	Block 18	S. F. Smith's Subdivision, Sections 18, 39, 14	$ 733 04
9068	Gilpin place	Lytle	Sibley	4,525 61
9069	Alley	Thirty-sixth to Thirty-seventh	Between Cottage Grove avenue and Ellis Park	1,564 06
9089	Elizabeth	West Indiana	West Erie	5,735 60
9092	Lyman	Main	Thirty-first	41,316 18
9093	Halsted	Sixteenth street viaduct	Canalport avenue	7,642 46
9110	Sullivan	Sedgwick	Cleveland avenue	2,723 17
9113	Alley	Division to Goethe	between North Clark and Dearborn avenue	2,491 18
9114	Alley	Burton place to North avenue	between North Clark and Dearborn avenue	2,146 14
9115	Church place	Aberdeen	Center avenue	2,263 75
9116	Irving avenue	West Adams	West Jackson	1,791 13
9141	Alley	West Van Buren to West Harrison	between Canal and Clinton	3,313 18
9146	Fry	Rose	Ashland avenue	7,270 84
9147	Fifth avenue	Polk	Taylor	4,941 65
9148	Superior	North Wells	North Franklin	3,009 90
9149	Western avenue	West Lake	West Indiana	7,806 29
9150	Webster avenue	Clybourn avenue	Dominick	4,620 25
9151	Olive	West Taylor	West Twelfth	9,189 34
9152	Damon	Sholto	May	3,201 02
9153	Harvard	Western avenue	Campbell avenue	6,229 81
9159	Twenty-second place	Wentworth avenue	Portland avenue	5,315 40
9186	Orchard	Clybourn avenue	North avenue	10,800 85
9198	Halsted	West Indiana	West Chicago avenue viaduct	6,294 74
9229	West Twenty-second	Chicago, Burlington & Quincy R. R.	Lawndale avenue	6,591 78
9265	Chestnut place	Chestnut	Delaware place	950 46
9266	Rush	Chicago avenue	North State	11,706 40
9267	Emerald avenue	Twenty-sixth	Twenty-ninth	15,065 77
9269	Emerald avenue	Twenty-ninth	Egan avenue	72,683 08
9271	Alleys	in block 19	C. T. subdivision W. ½, etc., section 17	3,427 54
9272	Seymour	Division	North avenue	20,549 84
9273	Lessing	West Chicago avenue	Chicago & North-Western Ry	6,878 72

9274	Alleys	in block 10	Wolcott's addition	1,242 00
9275	Ullman	Thirty-first	Douglas avenue	20,965 57
9276	Lock	Archer avenue	Lyman	14,733 24
9277	Whiting	North Wells	its western terminus	5,172 29
9278	Sedgwick	Eugenie	Centre	6,532 80
9279	North and South alley	in block 45	Original Town	1,888 81
9280	Leavitt	Milwaukee avenue	Armitage avenue	13,163 25
9281	Milwaukee avenue	West Lake	Austin avenue	8,197 64
9282	Alleys	Twenty-fourth to Twenty-fifth	between Wabash and Michigan aves	3,048 17
9283	Twenty-fifth	Hanover	Sanger	14,575 26
9284	Butterfield	Twenty-sixth	Thirtieth	12,960 61
9285	Twenty-fourth place	Wentworth avenue	Hanover	15,629 15
9286	Thirtieth	State	Wentworth avenue	9,009 60
9287	Lisle	Union	Halsted	7,289 10
9297	Alleys	in block 23	C. T. subdivision W. ½, etc., section 17	5,455 80
9298	Ellen	Milwaukee avenue	Lincoln	8,838 39
9299	Paulina	Waubansia avenue	Armitage avenue	24,519 90
9300	Bauwans	Ashland avenue	Blackhawk	7,702 84
9301	Alleys	in W. ½ blocks 22 to 29	C. T. subdivision S. E. ¼ section 17	2,982 61
9302	Hoyne avenue	West Indiana	West Chicago avenue	13,026 82
9303	Locust	North Wells	Western terminus	12,843 46
9304	Alley	Oak to Maple	between North Clark and La Salle	1,541 50
9306	Vernon Park place	Center avenue	Loomis	10,790 40
9307	Seminary avenue	Center	Fullerton avenue	20,584 73
9308	Lytle	West Harrison	Macalister place	5,025 87
9309	Jay	Garfield avenue	Webster avenue	4,773 11
9310	Howe	Willow	Garfield avenue	17,021 02
9311	Edwards	Garfield avenue	Webster avenue	3,971 85
9312	Blue Island avenue	West Twenty-first	West Twenty-second	9,551 21
9313	Fullerton avenue	North branch of Chicago River	Elston avenue	6,484 86
9314	Alley	in North half block 46	C. T. subdivision Section 7	1,486 80
9315	Deering	Thirty-first	Archer avenue	25,216 93
9337	Twenty-ninth	Hanover	Halsted	19,576 60
9347	Meridian	Desplaines	Halsted	3,187 43
9348	Chapin	Noble	Chicago & North-Western R'y	5,189 51
9365	Fulton	Rockwell	Kedzie avenue	23,166 60

STATEMENT OF ASSESSMENTS FOR WOODEN BLOCK PAVEMENT—*Continued.*

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
9366	Fifth avenue	Thirty-first	Thirty-third	$9,997 83
9367	West Congress	Campbell avenue	Rockwell	4,959 36
9385	East and west alley	Block 10	Stone's subdivision of Astor's addition	857 31
9386	Astor	Schiller	Burton place	5,255 95
9389	Perry	Clybourn	Fullerton avenue	6,669 90
9405	Cicero	West Van Buren	West Congress	2,681 55
9407	Fourteenth	Clark	Wabash avenue	14,407 15
9408	Cypress	Kendall	West Twelfth	12,284 09
9410	Loomis	West Van Buren	100 feet North of West Congress	1,414 75
9411	East and west alley	in South half block 49	C. T. subdivision Section 7	1,807 84
9425	West Twenty-second	Brown	South branch Chicago River	21,973 74
	Total			$2,383,578 93

STATEMENT OF ASSESSMENTS FOR MISCELLANEOUS STREET AND ALLEY IMPROVEMENTS.

No. of Warr'nt	IMPROVEMENT.	NAME OF STREET.	FROM	TO	AMOUNT.
8335	Curbing	Wisconsin	Sedgwick	Larrabee	$ 2,248 08
8339	Curbing and filling	Emerson avenue	Wood	Leavitt	4,633 86
8372	Granite	West 120 feet of east and w	est alley in Block 142, Scho	ol Section	954 51
8393	Curbing and filling	Fremont	Center	Belden avenue	3,838 49
8427	Granite	Canal	West Madison	West Lake	34,587 82
8428	Granite	Van Buren	Fifth avenue	South branch Chicago River	10,766 02
8451	Granite	Randolph	Wabash avenue	Michigan avenue	6,524 78
8457	Curbing and filling	West Thirteenth	Wood	Ogden avenue	40,696 65
8490	Granite	Washington	Franklin	Market	6,551 37
8491	Granite	Franklin	Madison	Lake	28,769 43
8560	Granite	Third avenue	Twelfth	Fourteenth	32,743 91
8562	Granite	Fifth avenue	Madison	Van Buren	24,893 22

8577	Granite	South Water	Fifth avenue	Lake	22,943 75
8579	Curbing and filling	Hinman	Blue Island avenue	Robey	28,837 25
8587	Granite	Randolph	Clark	South branch of Chicago River	32,799 00
8592	Granite	West Madison	South branch Chicago River	Halsted	41,681 54
8662	Curbing	North Market	Schiller	North avenue	1,593 77
8671	Curbing and filling	West Twelfth	California avenue	Kedzie avenue	8,173 00
8679	Curbing	Burling	Willow	Center	2,955 21
8710	Granite	La Salle	Monroe	Adams	10,473 21
8715	Curbing	Howe	Willow	Garfield avenue	4,178 44
8841	Granite	Alleys	Block 140	School Section Addition	1,514 19
8854	Granite	Jackson	Fifth avenue	240 feet east of Market	12,041 92
8855	Granite	Marble place	Clark	La Salle	3,394 92
8870	Granite	East and west alley	In Block 95	School Section Addition	3,070 17
8878	Grading and planking	Ashland avenue	West Twenty-second	South branch of Chicago River	5,818 45
8908	Grading and planking	Center avenue	West Twenty-second	Southern terminus	2,558 74
8966	Granite	Market	Adams	Van Buren	6,798 15
9160	Curbing and filling	West Division	Western avenue	Sacramento avenue	10,166 72
9261	Grading and planking	Alleys	In east half Blocks 21 and 30, C. T.	subdivided southeast quarter Sec'n 17	2,717 75
9262	Granite	Polk	State	Fifth avenue	22,092 47
9268	Granite	La Salle	Lake	Randolph	7,123 96
9270	Granite	Fourth avenue	Harrison	Twelfth	44,090 01
9305	Grading and macadamizing	Ellis avenue	Douglas avenue	Egan avenue	14,149 10
9336	Curbing and filling	Huron	Kingsbury	West terminus	2,552 83
9406	Granite	Central avenue	Randolph	South Water	17,725 75
9409	Granite	South Water	Michigan avenue	Central avenue	5,874 66
	Total				$512,088 10

STATEMENT OF ASSESSMENTS FOR LAYING WATER SERVICE PIPES.

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
8326	Elston avenue	Armitage avenue	Snow	$6,872 25
8342	North State	Chicago River	Chicago avenue	466 80
8343	Ellis avenue	Douglas avenue	Egan avenue	743 80
8344	Harrison	Michigan avenue	South branch Chicago River	333 60
8345	Polk	State	Fifth avenue	221 70
8346	Marshfield avenue	West Polk	West Twelfth	2,137 00
8347	Colorado avenue	West Madison	West Jackson	2,772 15
8348	West Jackson	Sacramento avenue	Central Park avenue	4,296 00
8349	North Market	Schiller	North avenue	452 70
8350	Erie	St. Clair	600 feet east	678 75
8351	Fulton	Rockwell	Kedzie avenue	4,772 90
8352	Emerson avenue	Wood	Leavitt	2,233 00
8353	Emerson avenue	Leavitt	Oakley avenue	445 60
8354	Lake Park	Twenty-ninth	Thirty-first	642 00
8355	Locust	North Wells	Western terminus	315 60
8356	California avenue	West Madison	West Harrison	1,957 40
8379	North Franklin	North avenue	Menomonee	502 80
8380	Pine	Superior	Chicago avenue	175 60
8381	Desplaines	West Lake	West Monroe	674 00
8412	Fremont	Center	Belden avenue	943 05
8413	Paulina	West Polk	West Twelfth	2,339 60
8414	Marion place	West Division	Ellen	577 40
8415	Ashland avenue	West fork South branch Chicago River	Egan avenue	6,671 80
8416	Laurel	Thirty-first	Egan avenue	6,724 30
8417	Western avenue	North avenue	Fullerton avenue	5,158 50
8430	Orchard	North avenue	Fullerton avenue	3,554 15
8431	Seminary avenue	Center	Fullerton avenue	1,880 70
8432	Vernon Park place	Center avenue	Loomis	946 40
8433	California avenue	Milwaukee avenue	Fullerton avenue	748 80
8434	Winchester avenue	West Polk	West Twelfth	2,425 20
8435	Park	Wood	Lincoln	359 95

8436	Bradley	Holt	Elston avenue	366 55
8437	Western avenue	West Twenty-second	West Twenty-sixth	4,677 05
8438	North Franklin	Sigel	North avenue	1,293 45
8439	Brown	Wright	Chicago & North Western R'y	692 75
8440	California avenue	West Madison	Fulton	1,057 20
8453	West Twentieth	Blue Island avenue	Ashland avenue	304 80
8454	Quarry	Chicago & Alton Railroad	Twenty-seventh	898 00
8455	Emerald avenue	Twenty-ninth	Egan avenue	5,062 20
8456	West Twenty-second	Brown	South branch of Chicago River	1,919 00
8484	Fremont	Willow	Center	1,179 10
8485	Osgood	Center	Belden avenue	1,845 40
8486	Belden avenue	Halsted	Perry	2,421 75
8487	Lincoln avenue	North Wells	Center	429 60
8488	Ullman	Thirty-first	Douglas avenue	2,922 70
8499	West Clybourn place	Ashland avenue	Robey	2,390 15
8500	Twenty-seventh	Halsted	Quarry	931 10
8501	Fullerton avenue	Halsted	Southport avenue	1,298 40
8502	Racine avenue	Center	Fullerton avenue	2,936 50
8503	Oakley avenue	West Twelfth	West Fourteenth	805 40
8504	North avenue	Western avenue	California avenue	2,540 15
8505	Lexington	Campbell avenue	Rockwell	411 20
8506	Kedzie avenue	Central Park boulevard	West Van Buren	2,902 60
8507	Hinman	Blue Island avenue	Robey	698 40
8508	Lock	Archer avenue	Lyman	321 75
8509	Lyman	Main	Thirty-first	914 55
8510	Deering	Thirty-first	Archer avenue	1,514 20
8511	Fullerton avenue	North branch Chicago River	Elston avenue	846 70
8512	Fuller	Archer avenue	Cologne	714 80
8513	Jay	Garfield avenue	Webster avenue	125 80
8514	Howe	Willow	Garfield avenue	2,758 60
8549	Blue Island avenue	West Twenty-second	Webster avenue	12,702 80
8558	Ogden avenue	West Twelfth	California avenue	5,379 30
8566	West Twelfth	Ogden avenue	California avenue	5,294 40
8567	Robey	West Twelfth	Blue Island avenue	1,064 50
8568	Halsted	South branch Chicago River	Egan avenue	6,394 40
8578	Western avenue	Ogden avenue	West Twenty-second	7,021 85

STATEMENT OF ASSESSMENTS FOR LAYING WATER SERVICE PIPES—CONTINUED.

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
8551	West Superior	Noble	Robey	$ 692 75
8584	Eighteenth	Michigan avenue	Wentworth	281 40
8591	Menomonee	North Clark	Sedgwick	296 70
8672	West Jackson	Halsted	Hoyne avenue	1,466 15
8677	West Adams	Rockwell	Sacramento avenue	2,853 20
8687	North avenue	California avenue	Kedzie avenue	1,677 00
8688	Lincoln	West Taylor	West Twelfth	455 60
8689	Lee place	Robey	Hoyne avenue	809 40
8693	West Monroe	Rockwell	California avenue	2,055 20
8694	Augusta	Wood	Robey	479 80
8695	Chestnut place	Chestnut	Delaware place	136 50
8799	Alexander	Wentworth avenue	Stewart avenue	712 40
8976	Vedder	Larrabee	Halsted	1,084 65
9067	Walnut	190 feet east of Sacramento avenue	190 feet west of Sacramento avenue	636 80
9111	Ogden place	Ogden avenue	Paulina	343 90
9112	West Polk	Western avenue	Campbell avenue	349 80
9131	Burling	Willow	Center	580 80
9174	Leavitt	Milwaukee avenue	Armitage avenue	856 40
9175	Sloan	Noble	Elston avenue	212 10
9176	Green	Fulton	West Kinzie	330 10
9177	Grand boulevard	Douglas avenue	800 feet south	644 40
9178	Emerald avenue	Archer avenue	Twenty-sixth	150 30
9179	Sedgwick	Eugenie	Lincoln avenue	459 30
9180	Curtis	West Huron	May	644 10
9181	West Twelfth	California avenue	Kedzie avenue	3,707 20
9182	Robey	Armitage avenue	Fullerton avenue	3,041 40
9183	West Superior	Robey	Leavitt	1,742 45
9202	Michigan	North Clark	North Wells	292 50
9203	Orchard	Clybourn avenue	North avenue	153 00
9204	Webster avenue	Clybourn avenue	Dominick	523 80
9205	Twenty-seventh	State	Portland avenue	937 20

9206	West Division	Western avenue	Sacramento avenue	7,375 00
9207	Carroll avenue	Elizabeth	Ada	369 50
9208	West Ohio	Lincoln	Robey	575 40
9209	Holt	West Division	North avenue	804 60
9210	Paulina	West Fifteenth	West Twelfth	218 70
9211	Ingraham	Noble	Elston avenue	458 40
9212	Flournoy	Oakley avenue	Western avenue	348 00
9213	Luce	West Blackhawk	North terminus	154 20
9214	Sacramento avenue	West Lake	West Van Buren	870 50
9215	Holt	West Chicago Avenue	Augusta	216 80
9216	Fry	Rose	Ashland avenue	223 90
9217	Elizabeth	West Indiana	West Erie	124 80
9218	Church place	Aberdeen	Center avenue	405 00
9219	Ada	West Kinzie	Austin avenue	249 30
9220	Avon place	Robey	Hoyne avenue	643 90
9221	Harvard	Western avenue	Campbell avenue	301 30
9222	Francisco	West Lake	Colorado avenue	216 80
9237	Twenty fifth	Hanover	Sanger	1,726 00
9238	Twenty-ninth	Hanover	Halsted	435 60
9239	Butterfield	Twenty-sixth	Thirtieth	806 90
9240	Carroll avenue	Curtis	Ann	264 20
9241	Julian	Ashland avenue	Wood	181 80
9242	Damon	Sholto	May	339 60
9243	Lisle	Union	Halsted	384 50
9244	Dean	Brigham	Paulina	293 00
9245	Meridian	Desplaines	Halsted	617 00
9246	Blanche	Fleetwood	Ashland avenue	447 20
9247	Elk Grove	Wood	North avenue	298 65
9248	Hoyne avenue	Milwaukee avenue	Armitage avenue	1,475 60
9249	Olive	West Taylor	West Twelfth	678 20
9250	Astor	Schiller	Burton place	1,161 80
9251	Union	West Sixteenth	West Twenty-second	240 80
9252	Winchester avenue	Ogden avenue	West Polk	819 50
9253	California avenue	North avenue	Milwaukee avenue	5,674 85
9254	Milwaukee avenue	Western avenue	California avenue	5,215 20
9256	Milwaukee avenue	California avenue	Fullerton avenue	1,562 20
	Total			$211,718 10

STATEMENT OF ASSESSMENTS FOR LAYING PRIVATE DRAINS.

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
8322	Elston avenue	Armitage avenue	Fullerton avenue	$3,906 00
8357	Hudson avenue	Sigel	North avenue	365 50
8358	Blackhawk	Sedgwick	Halsted	304 00
8359	Marion place	West Division	Ellen	512 00
8360	Lake Park avenue	Twenty-ninth	Thirty-first	231 00
8361	Fremont	Center	Belden avenue	836 00
8362	Wieland	Schiller	North avenue	480 00
8363	West Twelfth	Ashland boulevard	Ogden avenue	4,845 00
8364	Twenty-fourth place	Hanover	Sanger	558 00
8408	North Franklin	North avenue	Menomonee	684 00
8409	West Jackson	Sacramento avenue	Central Park avenue	3,084 50
8410	North Market	Schiller	North avenue	420 00
8411	Locust	North Wells	Western terminus	314 50
8441	Western avenue	West Twenty-second	West Twenty sixth	2,263 00
8442	Ashland avenue	Fork South branch Chicago River	Egan avenue	5,409 50
8443	Seminary avenue	Center	Fullerton avenue	1,580 00
8444	Western avenue	North avenue	Fullerton avenue	4,182 50
8445	Fremont	William	Center	486 00
8446	Laurel	Thirty-first	Egan avenue	4,665 50
8447	Ullman	Thirty-first	Douglas avenue	1,632 00
8448	Winchester avenue	West Polk	West Twelfth	1,360 00
8515	Bradley	Holt	Elston avenue	255 00
8516	Park	Wood	Lincoln	215 00
8517	Vernon Park place	Center avenue	Loomis	523 00
8518	Jay	Garfield avenue	Webster avenue	110 00
8519	Fullerton avenue	North branch Chicago River	Elston avenue	620 00
8520	Osgood	Center	Belden avenue	1,340 00
8521	Morgan	West Eighteenth	West Twenty-second	576 00
8522	Edward	Garfield avenue	Webster avenue	275 50
8523	Eagle	Des Plaines	Halsted	448 00
8524	West Twentieth	Blue Island avenue	Ashland avenue	187 00

8525	Belden avenue	Halsted	Perry	2,059 00
8529	Fullerton avenue	Halsted	Perry	1,417 00
8530	Racine avenue	Center	Fullerton avenue	2,160 00
8531	North Franklin	Sigel	North avenue	432 00
8532	West Clybourn place	Ashland avenue	Robey	1,808 00
8533	Howe	Willow	Garfield avenue	1,020 00
8534	Deering	Thirty-first	Archer avenue	720 00
8535	Fuller	Archer avenue	Cologne	752 00
8536	Twenty-seventh	Halsted	Quarry	2,800 00
8537	Blue Island avenue	Sixteenth street viaduct	West Twenty-second	1,080 00
8538	Lock	Archer avenue	Lyman	221 00
8539	Lexington	Campbell avenue	Rockwell	224 00
8540	Lyman	Main	Thirty-first	645 00
8541	Hinman	Blue Island avenue	Robey	544 00
8542	Emerald avenue	Twenty-ninth	Egan avenue	3,503 00
8543	Twenty-second place	Wentworth avenue	Archer avenue	204 00
8544	Oakley avenue	West Twelfth	West Fourteenth	504 00
8545	Kedzie avenue	Central Park boulevard	West Van Buren	1,692 00
8546	Brown	Wright	Chicago & North-Western R'y	400 00
8547	California avenue	West Madison	Fulton	752 00
8548	Marshfield avenue	Wett Polk	West Twelfth	1,248 00
8551	Blue Island avenue	West Twenty second	Western avenue	7,254 00
8559	Ogden avenue	West Twelfth	California avenue	4,998 00
8569	Western avenue	Ogden avenue	West Twelfth	3,875 00
8571	Halsted	South branch Chicago River	Egan avenue	3,301 50
8580	Robey	West Twelfth	Blue Island avenue	992 00
8588	West Twelfth	Ogden avenue	California avenue	3,544 00
8593	Menomonee	North Clark	Sedgwick	322 00
8676	West Adams	Rockwell	Sacramento avenue	1,950 00
8872	Orchard	North avenue	Fullerton avenue	2,100 00
9065	Lee place	Robey	Hoyne avenue	464 00
9066	Carroll avenue	Curtis	Ann	546 00
9107	Ogden avenue	Ogden avenue	Paulina	520 00
9108	West Madison	Homan	Crawford avenue	1,836 00
9109	West Polk	Western avenue	Campbell avenue	221 00
9184	Burling	Willow	Center	665 00

STATEMENT OF ASSESSMENTS FOR LAYING WATER SERVICE PIPES—CONTINUED.

No. of Warr'nt	NAME OF STREET.	FROM	TO	AMOUNT.
9185	Augusta	Wood	Robey	$ 171 00
9200	West Ohio	Lincoln	Robey	384 00
9201	Holt	West Division	North avenue	465 00
9235	West Superior	Robey	Leavitt	1,215 00
9236	Leavitt	Milwaukee avenue	Armitage avenue	468 00
9257	California avenue	North avenue	Fullerton avenue	5,442 50
9258	Milwaukee avenue	Western avenue	California avenue	4,543 50
9259	Milwaukee avenue	California avenue	Fullerton avenue	1,152 00
9263	Fulton	Rockwell	Kedzie avenue	3,639 00
9349	West Monroe	Rockwell	California avenue	1,110 00
9350	Butterfield	Twenty-sixth	Thirtieth	204 00
9351	Twenty-seventh	State	Portland avenue	528 00
9352	Lincoln	West Taylor	West Twelfth	355 00
9353	West Division	California avenue	Sacramento avenue	1,032 00
9354	Fry	Rose	Ashland avenue	203 00
9355	Robey	Armitage avenue	Fullerton avenue	1,937 25
3356	West Division	Western avenue	California avenue	3,901 60
9357	Sloan	Noble	Elston avenue	208 00
9371	Sedgwick	Eugenie	Lincoln avenue	430 00
9372	Carroll avenue	Ann	Ada	333 00
9373	Hoyne avenue	Milwaukee avenue	Armitage avenue	928 00
9374	North avenue	California avenue	Kedzie avenue	1,782 00
9391	Twenty-fifth place	Wentworth avenue	Halsted	816 00
9392	Union	West Sixteenth	West Twenty-second	330 00
9393	Ingraham	Noble	Elston avenue	221 00
9394	West Twelfth	California avenue	Kedzie avenue	2,088 00
9414	Orchard	Clybourn avenue	North avenue	96 00
9415	Webster avenue	Clybourn avenue	Dominick	238 00
9416	Perry	Clybourn avenue	Fullerton avenue	155 00
9417	Twenty-ninth	Hanover	Halsted	221 00
9418	Francisco	West Kinzie	Colorado avenue	640 00

9419	Church place	Aberdeen	Center avenue	468 00
9420	Avon place	Robey	Hoyne avenue	281 00
9421	Harvard	Western avenue	Campbell avenue	210 00
9422	Potomac avenue	Robey	Western avenue	512 00
9423	West Congress	Campbell avenue	Rockwell	128 00
9424	Sacramento avenue	West Lake	West Kinzie	160 00
	Total			$136,387 25

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS.

No. of Warr'nt.	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
8330	B	O'Brien	Jefferson	Halsted	$ 193 19
8332	N	Bloomingdale road	Western avenue	Kedzie avenue	1,104 14
8333	B	Clara	Western avenue	Perry avenue	181 58
8334	B	Blue Island avenue	West Twelfth	West Sixteenth	612 81
8368	B	California avenue	West Madison	West Kinzie	211 47
8369	B	Park avenue	Lincoln	Chicago, St. Louis & Pacific R'y	625 80
8370	B	Washtenaw avenue	Chicago, Burlington & Quincy Railroad	West Twenty-sixth	517 95
8371	B	Washtenaw avenue	West Twelfth	Ogden avenue	80 10
8373	N	West Huron	Kedzie avenue	Crawford avenue	879 26
8374	B	Douglas avenue	Cottage Grove avenue	Grand boulevard	192 25
8375	B	Douglas avenue	Michigan avenue	State	165 48
8376	B	Portland	Archer avenue	Thirty-first	298 50
8377	B	Walnut	Francisco	Kedzie avenue	462 74
8382	B	Cicero avenue	West Jackson	West Harrison	269 44
8385	B	Rockwell	North avenue	Armitage avenue	658 79
8386	B	Center	Howe	Racine avenue	606 16
8387	B	Huron	North Wells	Kingsbury	169 80
8388	B	North Franklin	Kinzie	Division	1,340 09
8389	B	Cass	Kinzie	Illinois	110 50
8390	B	Ontario	North Wells	Kingsbury	1,248 04
8391	B	Thirty-seventh	Halsted	Laurel	176 38
8395	B	Judd	Stewart avenue	Jefferson	345 56

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—CONTINUED.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
8396	B	Howe	Willow	Garfield avenue	$ 229 87
8397	B	Hudson avenue	Sigel	Center	850 07
8398	B	Clay	Halsted	Sheffield avenue	88 50
8399	B	Webster avenue	Halsted	North branch Chicago River	1,005 65
8400	N	Coulter	Western avenue	California avenue	514 61
8401	B	Winthrop place	West Polk	West Taylor	244 62
8402	B	Page	West Madison	West Lake	327 15
8403	B	Nebraska avenue	Bloomingdale road	Armitage avenue	615 90
8418	B	Wood	Archer avenue	Egan avenue	600 90
8419	W	Homan avenue	West Kinzie	West Chicago avenue	583 26
8420	B	West Twenty-first	Fisk	May	266 65
8421	B	Le Moyne	Robey	Hoyne avenue	320 08
8422	B	York	Laflin	Ashland boulevard	99 20
8423	B	Boone	De Kalb	Leavitt	46 17
8424	B	De Kalb	Leavitt	Boone avenue	68 09
8458	B	Thirty-sixth	Ashland boulevard	Lincoln avenue	401 82
8463	B	Lexington	Western avenue	Campbell avenue	141 08
8464	W	Raleigh court	Wisconsin Central Railroad	West Thirteenth	130 79
8465	B	Nineteenth	State	Grove	601 32
8466	W	Fourth avenue	Van Buren	Taylor	308 33
8467	B	Twenty-first	Wentworth avenue	Stewart avenue	308 23
8468	B	Dickens avenue	California avenue	Humboldt Park boulevard	606 79
8469	W	Stewart avenue	West Twelfth	Meagher	393 80
8470	B	Wilson	Stewart avenue	Jefferson	264 88
8471	B	Greenwood avenue	Western avenue	Station	377 19
8472	N	Fullerton avenue	Elston avenue	Western avenue	745 87
8473	E	Kedzie avenue	West Kinzie	Central Park boulevard	107 78
8474	W	Sacramento avenue	West Kinzie	Sacramento square	144 28
8475	S	Fillmore	California avenue	Sacramento avenue	365 88
8476	B	William avenue	Hamlin avenue	Central Park avenue	659 37
8477	B	Hamlin avenue	West Division	North Park avenue	1,443 00

8478	N	West Division	Central Park avenue	Crawford avenue	662 51
8479	B	Crawford avenue	West Division	North avenue	735 03
8480	B	Thirty-seventh	Wood	Robey	218 58
8481	B	Honore	Douglas avenue	Egan avenue	261 05
8482	E	Lincoln	Thirty-seventh	Egan avenue	285 82
8483	B	Lincoln	Douglas avenue	Thirty-seventh	297 85
8497	S	Forsythe	Lawndale avenue	Bonney	99 64
8526	B	Western avenue	North avenue	Fullerton avenue	1,772 75
8570	B	West Fifteenth	Stewart avenue	Canal	238 76
8573	B	Western avenue	West Sixteenth	Ogden avenue	647 45
8574	B	Wilcox avenue	Western avenue	Sacramento avenue	1,340 46
8575	N	Egan avenue	State	Cottage Grove avenue	1,438 66
8619	B	Oakley avenue	Milwaukee avenue	Fullerton avenue	1,323 68
8620	B	Stave	Armitage avenue	California avenue	847 04
8621	B	North Franklin	North avenue	Menomonee	275 50
8622	B	Indiana	North Clark	Kingsbury	1,136 00
8623	B	Cottage Grove avenue	Twenty-ninth	Egan avenue	677 57
8624	B	Center avenue	West Madison	West Twelfth	972 50
8625	B	Morgan	Milwaukee avenue	West Chicago avenue	43 50
8626	B	Lill avenue	Western avenue	Station	407 93
8628	B	Center avenue	West Twelfth	West Twenty-second	2,103 56
8629	B	Austin avenue	Noble	Ashland boulevard	444 21
8638	B	West Twenty-second	Ashland boulevard	Western avenue	3,389 42
8680	B	Walnut	Homan avenue	Central Park avenue	92 50
8681	B	Walnut	Ashland boulevard	Western avenue	921 19
8682	B	South Park avenue	Twenty-second	Douglas	1,780 61
8683	B	Cottage Grove avenue	Twenty-second	Twenty ninth	1,789 96
8684	B	State	Twenty-second	Egan avenue	11,068 78
8685	B	Loomis	West Madison	West Twelfth	576 68
8686	E	St. Louis avenue	West Kinzie	West Chicago avenue	467 13
8690	B	Emerald avenue	Archer avenue	Twenty-sixth	161 50
8691	B	Park avenue	Wood	Lincoln	169 66
8696	B	Wilmot avenue	Armitage avenue	Leavitt	214 88
8697	B	Halsted	Division	Willow	1,192 69
8698	B	Cass	Superior	Delaware place	105 09
8699	B	Erie	North Clark	North branch of Chicago River	893 60

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—CONTINUED.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
8700	B	Elm	North Franklin	Lake shore drive	$ 224 17
8701	B	Edbrooke place	Western avenue	Perry avenue	97 36
8702	B	Moffat	Western avenue	Western terminus	118 32
8703	B	Artesian avenue	West Lake	West Kinzie	79 20
8704	E	Rockwell	West Lake	Fulton	73 11
8705	B	Alice place	Western avenue	Perry avenue	149 72
8706	B	Western avenue	Rice	Gross parkway	620 12
8707	B	West Huron	Wood	Western avenue	253 82
8708	B	Nebraska	Throop	Ashland boulevard	116 62
8709	N	Twenty-second	Canalport avenue	Blue Island avenue	1,667 55
8712	B	Canal	West Madison	Harrison	2,039 21
8740	B	Shakespeare avenue	California avenue	Humboldt Park avenue	109 76
8741	B	Robey	North avenue	Fullerton avenue	824 54
8742	B	Halsted	Willow	Fullerton avenue	595 49
8743	B	Twenty-third	State	Wentworth avenue	460 77
8744	B	Prairie avenue	Thirty-first	Egan avenue	913 56
8745	B	Forrest avenue	Douglas avenue	Egan avenue	746 05
8746	N	Eda	State	Indiana avenue	76 00
8747	B	Emerald avenue	Douglas avenue	Egan avenue	360 64
8748	B	Haynes court	Archer avenue	Lyman	182 00
8749	B	McGovern	Milwaukee avenue	Western terminus	112 50
8750	B	Point	Armitage avenue	California avenue	172 28
8751	B	Palmer avenue	California avenue	Western terminus	248 46
8752	B	West Monroe	Western avenue	California avenue	676 06
8753	B	Clybourn avenue	Division	Fullerton avenue	1,324 85
8754	B	West Monroe	Albany avenue	Kedzie avenue	88 74
8755	B	Johnston avenue	California avenue	Thomas	238 72
8756	B	Elgin	Purple	Stewart avenue	148 25
8757	B	Purple	Nineteenth	Archer avenue	236 08
8758	B	Armitage avenue	Milwaukee avenue	Kedzie avenue	519 50
8759	B	Byron	California avenue	Humboldt Park boulevard	296 66

8760	B	Warren avenue	Ogden avenue	**Chicago, St. Louis and Pittsburg Railroad**	270 75
8761	B	Archer avenue	**South fork of South branch, Chicago River**	Leavitt	3,810 20
8762	B	Archer avenue	Leavitt	Western avenue	199 29
8763	B	Jefferson	West Twelfth	West Sixteenth	1,407 30
8764	B	Jefferson	West Sixteenth	West Twenty-second	628 23
8765	B	Tucker	Douglas avenue	Thirty-eighth court	470 40
8766	B	West Congress	Western avenue	Campbell avenue	148 78
8772	B	Belden avenue	Perry	Southport avenue	85 41
8773	E	Pacific avenue	Van Buren	Taylor	491 36
8774	B	Uhland	Southern terminus	Northern terminus	47 07
8775	B	Sedgwick	Superior	Division	291 84
8776	N	West Kinzie	Canal	Western avenue	1,568 72
8777	B	Station	Leavitt	Western avenue	674 63
8778	B	Robey	Archer avenue	Egan avenue	826 28
8779	B	West Twenty-sixth	Kedzie avenue	Central Park avenue	819 81
8780	B	Green	Fulton	West Indiana	489 86
8781	S	Thirty-fourth court	Lincoln	Robey	268 82
8782	B	West Twelfth	Kedzie avenue	Central Park avenue	885 92
8783	B	West Twelfth	Central Park avenue	Central Park boulevard	245 72
8784	B	Plum	Loomis	Laflin	182 48
8785	B	Shields avenue	Twenty-sixth	Thirty-second	838 48
8786	B	Augusta	Wood	Robey	181 40
8787	B	Jefferson	Carroll avenue	West Indiana	417 30
8788	B	Jefferson	West Madison	Carroll avenue	328 58
8789	B	Twenty-seventh	State	**Lake Shore & Michigan Southern R'y**	238 37
8790	B	Seymour	West Chicago avenue	Grand avenue	340 41
8791	B	Laughton	Hoyne avenue	California avenue	149 40
8801	B	California avenue	North avenue	Fullerton avenue	625 94
8802	B	Seymour	North avenue	Armitage avenue	139 05
8803	B	Washtenaw avenue	North avenue	Armitage avenue	190 05
8804	B	Hobbie	Hawthorne avenue	Sedgwick	895 44
8805	B	Elm	North Franklin	Crosby	978 10
8806	B	Grace	Division	Vedder	62 80
8807	B	Hoffman avenue	Milwaukee avenue	Fullerton avenue	212 44
8808	B	Lawndale avenue	Grand avenue	Prince	318 92
8809	B	Mozart	North avenue	Armitage avenne	368 80

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—*Continued.*

No. of Warr'nt	Side of Street	NAME OF STREET	FROM	TO	AMOUNT.
[illegible]	[illegible]	Heine	North avenue	Armitage avenue	$ 616 00
[illegible]	[illegible]	North Wells	Chicago River	Division	2,601 28
[illegible]	[illegible]	Humboldt	North avenue	Bloomingdale road	328 80
[illegible]	[illegible]	Noble	West Kinzie	West Chicago avenue	280 80
[illegible]	E	Western avenue	Fullerton avenue	Chicago & North-Western Railway	284 37
[illegible]	[illegible]	Larrabee	Division	North avenue	1,351 04
[illegible]	[illegible]	Ridgeway avenue	Williams avenue	North avenue	232 32
[illegible]	[illegible]	Tinkham avenue	West Division	Pierce	199 90
[illegible]	[illegible]	Prince	Central Park avenue	Hamlin avenue	431 46
[illegible]	[illegible]	North avenue	Robey	California avenue	844 85
[illegible]	[illegible]	Frederick	Central Park avenue	Hamlin avenue	341 60
[illegible]	[illegible]	Blackhawk	Sedgwick	Halsted	1,127 75
[illegible]	[illegible]	Blackhawk	Halsted	North branch Chicago River	1,126 65
[illegible]	[illegible]	Vedder	Division	Halsted	627 23
[illegible]	[illegible]	Cleveland avenue	Clybourn avenue	Fullerton avenue	277 44
[illegible]	[illegible]	Division	North Clark	North branch Chicago River	1,382 57
[illegible]	[illegible]	Henry	Blue Island avenue	Ashland boulevard	181 60
[illegible]	[illegible]	Lawndale avenue	Ogden avenue	West Twenty-sixth	143 88
[illegible]	[illegible]	Ellen	Milwaukee avenue	Wood	129 19
[illegible]	S	West Twenty-sixth	Central Park avenue	Lawndale avenue	191 99
[illegible]	[illegible]	Shober	West Division	Wabansia avenue	181 78
[illegible]	[illegible]	Rawson	North branch Chicago River	Elston avenue	109 80
[illegible]	[illegible]	Calumet avenue	Thirty-seventh	Egan avenue	152 01
[illegible]	[illegible]	Lake avenue	Douglas avenue	Egan avenue	70 88
[illegible]	[illegible]	Twenty-sixth	State	Cottage Grove avenue	192 97
[illegible]	N	West Huron	Western avenue	Washtenaw avenue	184 66
[illegible]	[illegible]	Fourteenth	Clark	State	173 23
[illegible]	[illegible]	South Dearborn	Twenty-sixth	Egan avenue	1,135 58
[illegible]	[illegible]	West Nineteenth	Blue Island avenue	Western avenue	1,548 03
[illegible]	[illegible]	South La Salle	Twenty-second	Thirty-third	1,999 80
[illegible]	[illegible]	Twenty-second	State	South branch Chicago River	1,430 28

8861	B	Lincoln	West Nineteenth	Blue Island avenue	660 34
8862	B	Bunker	Canal	Halsted	257 00
8863	B	West Madison	Halsted	Robey	3,968 38
8864	B	West Madison	Robey	Western avenue	939 13
8865	B	Halsted	West Randolph	West Erie	981 79
8866	B	Spruce	Laflin	Loomis	97 72
8867	B	Sedgwick	North avenue	Belden avenue	1,114 67
8868	B	Throop	West Madison	West Harrison	392 96
8869	B	Hoyne avenue	West Lake	West Division	545 50
8910	B	Rebecca	Western avenue	California avenue	1,030 80
8911	B	Thirty-seventh	Grand boulevard	Eastern terminus	780 40
8912	B	Thirtieth	South Park avenue	Lake Park avenue	152 52
8913	B	Twenty-ninth	Cottage Grove avenue	Lake Shore & Michigan Southern Railway	953 06
8914	B	Twenty-seventh	Lake Shore & Michigan Southern Railway	Wallace	886 67
8915	B	Twenty-third	South Park avenue	State	510 54
8916	B	Twenty-fourth	South Park avenue	State	237 14
8917	N	Grand avenue	West Ohio	California avenue	293 44
8918	B	West Twenty second	California avenue	Homan avenue	1,473 31
8919	B	Almond	West Taylor	Ashland boulevard	101 23
8920	B	Seymour	West Chicago avenue	Grand avenue	611 41
8921	B	Fulton	Homan avenue	St. Louis avenue	177 55
8922	B	Washtenaw avenue	West Chicago avenue	West Division	738 26
8923	W	Rockwell	West Chicago avenue	Thomas	167 14
8924	N	West Chicago avenue	Grand avenue	Humboldt Park boulevard	136 00
8925	B	West Randolph	South branch Chicago River	Ada	3,065 16
8926	B	Commercial	North avenue	Northern terminus	418 88
8927	B	Law avenue	West Harrison	West Polk	304 06
8928	B	Millard avenue	Ogden avenue	West Twenty-sixth	688 60
8929	B	Gold	West Harrison	Gurley	203 28
8930	B	West Chicago avenue	Fairfield avenue	California avenue	67 60
8931	B	West Randolph	Ada	Ogden avenue	185 41
8932	B	Sebor	Clinton	Jefferson	97 20
8933	B	Larrabee	North avenue	Fullerton avenue	569 00
8934	B	Spaulding avenue	Ogden avenue	Douglas Park boulevard	1,086 77
8935	B	West Sixteenth	Albany avenue	Central Park avenue	1,677 95
8936	B	Spaulding avenue	West Twelfth	Douglas Park boulevard	552 25

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—CONTINUED.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
8937	B	California avenue	West Chicago avenue	North avenue	$ 435 22
8938	B	Thomas	Wood	Humboldt Park	1,573 00
8939	B	Sedgwick	Division	North avenue	1,422 27
8940	B	Wright	North avenue	Wabansia avenue	314 24
8941	N	West Sixteenth	Sacramento avenue	Kedzie avenue	316 86
8942	B	West Twenty-second	Homan avenue	Clifton Park avenue	184 18
8943	B	Frank	Blue Island avenue	Waller	347 00
8944	B	Green	West Randolph	West Monroe	512 66
8945	B	Green	West Monroe	West Harrison	366 40
8946	B	Wright	Halsted	West terminus	411 64
8947	B	Spaulding avenue	West Nineteenth	West Twenty-fourth	868 73
8948	B	Nebraska avenue	Armitage avenue	Palmer place	346 24
8949	B	West Division	Western avenue	Rockwell	359 97
8950	B	Fry	North Center avenue	Noble	76 60
8972	B	Campbell avenue	West Lake avenue	Grand avenue	235 65
8977	B	Fifth avenue	Twenty-sixth	Thirty-third	1,534 34
8978	B	Bradley	Noble	Holt	237 24
8979	B	Cleaver	Milwaukee avenue	Bradley	530 02
8980	B	Twenty-fifth	South Park avenue	Lake Shore and Michigan Southern Railway	495 59
8981	B	Bradley	Elston avenue	Noble	332 15
8982	B	Corwin place	Moore	Its southern terminus	100 42
8983	B	Washburn	Blue Island avenue	Lincoln	580 93
8984	B	Paulina	West Madison	West Twelfth	2,524 73
8985	B	Leavitt	West Madison	West Indiana	362 51
8986	B	Hastings	Laflin	Wood	274 34
8987	B	Fulton	Western avenue	California avenue	455 63
8988	B	Blue Island avenue	West Sixteenth	West Twenty-second	2,374 40
8989	B	Hoyne avenue	West Lake	DeKalb	709 24
8990	B	Wood	West Madison	West Lake	167 18
8991	B	Belter	May	Sholto	233 28
8992	B	Lull place	Ellen	Wood	109 52

8993	B	Chester	Clybourn avenue	Chicago, Milwaukee and St. Paul Railway	191	60
8994	B	Webster avenue	Halsted	North Park avenue	834	74
8995	B	Lane place	Center	Garfield avenue	177	83
8996	B	Brigham	Ashland boulevard	Wood	133	20
8997	B	Canal	West Madison	West Lake	862	62
8998	B	Bismark court	Noble	Eastern terminus	120	36
8999	B	Laflin	West Madison	West Twelfth	832	18
9000	B	Flournoy	Robey	Leavitt	193	25
9001	B	Osborne	West Indiana	West Ohio	99	90
9002	B	St. Louis avenue	Central Park boulevard	West Chicago avenue	624	39
9003	B	Flournoy	Western avenue	Campbell avenue	479	47
9004	B	Thirty-first	State	Halsted	5,238	70
9005	B	Garfield avenue	Halsted	North Park avenue	390	16
9006	B	North Clark	North Park avenue	Fullerton avenue	309	39
9007	B	Center	Howe	North Park avenue	198	22
9008	B	Van Horn	Robey	Western avenue	225	56
9009	B	Wallace	Twenty-sixth	Thirty-first	1,648	15
9010	B	Clinton	West Madison	Fulton	1,427	06
9011	B	West Harrison	Halsted	Western avenue	2,509	10
9012	B	Wallace	Archer avenue	Twenty-sixth	1,069	04
9013	B	Twenty-third place	Wentworth avenue	Butler	750	12
9014	B	Thirty-third	Paulina	Wood	217	94
9015	B	West Eighteenth	Wood	Western avenue	754	69
9016	B	Van Horn	Laflin	Wood	76	80
9017	B	Joseph	Archer avenue	Hickory	203	66
9018	B	Market square	Archer avenue	South terminus	208	42
9019	B	Fuller	Archer avenue	South branch Chicago River	443	26
9020	B	Blue Island avenue	West Harrison	West Twelfth	1,702	84
9021	B	North Franklin	Sigel	North avenue	505	68
9022	B	Fake	Lyman	Its northern terminus	167	87
9023	B	Mary	Archer avenue	Hickory	258	72
9024	B	Desplaines	West Harrison	West Twelfth	596	58
9025	B	Sangamon	West Randolph	West Erie	1,614	21
9026	B	West Madison	California avenue	Crawford avenue	905	26
9027	B	Carroll avenue	Ashland boulevard	Leavitt	881	79
9029	B	Bickerdike	West Indiana	West Chicago avenue	539	12

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—CONTINUED.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
9030	B	West Division	Elston avenue	Ashland boulevard	$1,509 83
9031	B	Warren avenue	Garfield Park	Crawford avenue	211 95
9032	B	West Twentieth	Throop	Western avenue	401 51
9033	B	Racine avenue	Clybourn avenue	Fullerton avenue	499 11
9034	B	West Indiana	Noble	Western avenue	1,463 79
9035	B	West Eleventh	Throop	Ashland boulevard	189 53
9036	B	Gurley	Blue Island avenue	May	410 38
9037	B	Sawyer avenue	West Nineteenth	West Twenty-fourth	870 79
9038	B	Springer avenue	Waterville	Ullman	306 99
9039	B	Church place	Archer avenue	Fuller	163 45
9040	B	Sangamon	West Randolph	West Harrison	457 37
9041	B	West Indiana	Jefferson	Noble	2,334 11
9042	B	Laflin	West Twelfth	West Twenty-second	630 33
9043	B	Kedzie avenue	West Twelfth	Ogden avenue	1,541 35
9044	B	West Quincy	Desplaines	Halsted	122 68
9045	B	Moore	Wood	Western avenue	499 77
9046	B	Canalport avenue	Canal	Brown	1,243 49
9047	B	Ogden avenue	West Van Buren	West Twelfth	793 00
9048	B	Ogden avenue	West Randolph	West Van Buren	378 53
9049	B	Carpenter	West Indiana	West Chicago avenue	877 58
9050	B	Desplaines	West Madison	West Harrison	1,533 14
9051	B	West Chicago avenue	Wood	Leavitt	886 77
9052	B	Nutt	West Sixteenth	West Eighteenth	80 00
9053	B	Brown	West Eighteenth	Canalport avenue	575 91
9054	B	Ogden avenue	West Twelfth	Albany Avenue	287 45
9055	B	Wood	West Chicago avenue	North avenue	1,021 75
9056	B	Newberry avenue	Wright	West Eighteenth	387 50
9057	B	Eighteenth place	May	Johnson	102 66
9058	B	Morgan	West Sixteenth	West Twenty-second	426 86
9059	B	Carpenter	West Madison	West Indiana	549 45
9060	B	Butterfield	Thirtieth	Egan avenue	632 18

9061	B	Ann	West Madison	West Kinzie	511 10
9062	B	May	West Madison	West Chicago avenue	951 93
9063	B	York	Ashland boulevard	Wood	223 66
9064	B	Thirty-second court	Cottage Grove avenue	Groveland avenue	125 40
9094	B	West Division	Kedzie avenue	Crawford avenue	813 79
9095	B	Kramer	Jefferson	Halsted	144 23
9096	B	Powell place	Western avenue	Rockwell	163 88
9097	B	Wabansia avenue	Western avenue	Humboldt Park boulevard	652 09
9098	B	Wade	Crittenden	Currier	127 91
9099	B	Currier	Augusta	Wade	817 95
9100	B	Crittenden	Noble	Chicago & North-Western R'y	402 61
9101	B	Trumbull avenue	West Twenty-second	West Twenty-sixth	1,000 88
9102	B	Poplar avenue	Stearns	Thirty-first	319 68
9103	B	Carroll avenue	Kedzie avenue	Western terminus	1,146 09
9104	B	Western avenue	West Sixteenth	West Twenty-first	214 50
9105	S	Ferdinand	Lincoln	Leavitt	575 41
9106	S	West Van Buren	Spaulding avenue	Kedzie avenue	107 10
9132	B	Staunton	West Madison	West Lake	586 68
9133	B	Thirty-second	Cottage Grove avenue	South Park avenue	132 66
9134	B	West Chicago avenue	Washtenaw avenue	Fairfield avenue	65 25
9135	B	West Fifteenth	Albany avenue	Central Park avenue	961 70
9136	B	Rumsey	West Chicago avenue	West Division	443 46
9137	B	Ohio	North Clark	Kingsbury	1,069 60
9138	B	Thirty-seventh court	State	Wabash avenue	151 34
9139	B	Hermitage avenue	West Jackson	West Twelfth	429 12
9140	B	West Madison	Western avenue	California avenue	2,017 84
9142	B	West Monroe	Canal	Green	1,007 19
9143	B	Pearce	Desplaines	Halsted	162 00
9144	B	West Sixteenth	Allport	Loomis	1,008 40
9145	B	Ada	West Madison	Arbor place	279 59
9161	B	Eugenie	North Wells	Sedgwick	176 90
9162	B	Bowery	West Van Buren	West Congress	119 63
9163	B	Wisconsin	Sedgwick	Larrabee	298 98
9164	B	West Sixteenth	Loomis	Robey	1,130 47
9165	B	Wood	West Madison	West Harrison	407 21
9166	B	West Sixteenth	Halsted	Allport	473 51

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—CONTINUED.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
9167	B	North Market	Schiller	North avenue	$ 235 50
9168	B	Leavitt	West Twelfth	West Twenty-second	456 59
9169	B	Grant Place	North Clark	Larrabee	303 44
9170	S	Fullerton avenue	North Clark	Lincoln avenue	245 99
9171	B	Fremont	Curtis	Belden avenue	438 14
9172	B	Belden avenue	North Clark	Halsted	487 84
9173	B	Ashland boulevard	West Twelfth	West Twenty-second	169 50
9189	B	West Monroe	Green	Western avenue	1,103 59
9190	B	Blue Island avenue	Ashland boulevard	Western avenue	8,026 90
9191	B	West Lake	Rockwell	Homan avenue	2,862 28
9192	B	Sanger	Archer avenue	Twenty-sixth	122 00
9193	E	Laurel	Douglas avenue	Egan avenue	892 70
9194	B	Greenwich	Robey	Leavitt	323 50
9195	B	Elias	Archer avenue	Lyman	346 69
9196	E	Ashland avenue	West fork South branch Chicago River	C. & A. R. R.	382 64
9197	B	Churchill	Robey	Leavitt	391 71
9199	B	Irving avenue	West Polk	West Taylor	127 16
9225	B	Wood	West Harrison	Blue Island avenue	859 66
9226	B	May	West Eighteenth	West Twenty-second	315 04
9227	B	Hickory	Fuller	Cologne	660 93
9228	B	Butler	Twenty-fourth	Twenty-ninth	514 45
9230	B	Thirty-third	Archer avenue	Ashland avenue	404 45
9231	B	Thirty-second	Portland avenue	Emerald avenue	559 23
9232	B	Pearson	North State	Tower place	297 43
9233	B	Aberdeen	West Madison	West Eleventh	375 60
9234	B	Western avenue	West Madison	Ogden avenue	453 93
9255	B	Milwaukee avenue	North avenue	Fullerton avenue	2,692 85
9264	B	North Wells	Division	North Clark	3,197 29
9316	B	Fairfield avenue	Courtland	North avenue	179 10
9317	B	Indiana avenue	Fourteenth	Sixteenth	239 73
9321	B	Warren avenue	C., St. L. & P. R. R.	Homan avenue	1,146 72

9322	B	Leavitt	West Indiana	West Chicago avenue	544 99
9323	B	Thirty-seventh	State	Halsted	802 87
9324	B	Orchard	North avenue	Lincoln avenue	570 25
9325	B	Artesian avenue	West Kinzie	West Ohio	336 44
9326	B	Morgan	West Madison	West Harrison	244 93
9327	B	Honore	West Madison	West Harrison	547 32
9328	B	Ambrose	Lincoln	Leavitt	293 65
9329	N	Carroll avenue	Kedzie avenue	Albany avenue	200 47
9330	B	Francisco	West Madison	Fulton	302 42
9331	B	Parmelee	Oakley avenue	Western avenue	349 80
9332	B	Robey	West Lake	West Chicago avenue	639 24
9333	B	State	Van Buren	Twenty second	4,400 33
9334	B	Hinman	Blue Island avenue	Robey	438 51
9335	B	West Ohio	Ashland avenue	Lincoln	574 14
9338	B	West Twelfth	Canal	Ashland avenue	1,147 09
9339	B	Alexander	Wentworth avenue	Stewart avenue	140 80
9340	B	Flournoy	Campbell avenue	Rockwell	422 62
9341	B	Lincoln	West Madison	West Nineteenth	1,693 88
9342	B	Winchester avenue	West Madison	West Polk	1,097 12
9343	B	Fulton	Halsted	Western avenue	1,560 19
9344	N	Cork	Ashland avenue	Paulina	129 58
9345	B	Canal	West Twelfth	West Eighteenth	409 34
9346	B	Paulina	Wabansia avenue	Armitage avenue	343 78
9375	B	Western avenue	West Division	North avenue	508 48
9376	B	Samuel	West Chicago avenue	West Division	231 71
9377	S	West Twenty-eighth	Lawndale avenue	Central Park avenue	180 30
9378	B	Whitehouse	Lawndale avenue	Central Park avenue	363 37
9379	W	Central Park avenue	West Twenty-sixth	West Twenty seventh	210 87
9380	E	Central Park avenue	West Twenty-sixth	West Thirty-first	769 84
9381	B	Cortland	Campbell avenue	Kedzie avenue	534 08
9382	B	Clifton Park avenue	West Twenty-second	West Twenty-sixth	654 88
9383	N	Grand avenue	Central Park avenue	Homan avenue	553 02
9384	B	West Twenty-seventh	Lawndale avenue	Central Park avenue	271 46
9387	B	Curtis	West Madison	May	648 95
9388	B	Richmond	West Chicago avenue	Augusta	286 75
9395	B	Sherman place	Pine	Western terminus	112 10

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—CONTINUED.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
9167	B	North Market	Schiller	North avenue	$ 235 50
9168	B	Leavitt	West Twelfth	West Twenty-second	456 59
9169	B	Grant Place	North Clark	Larrabee	303 44
9170	S	Fullerton avenue	North Clark	Lincoln avenue	245 99
9171	B	Fremont	Curtis	Belden avenue	438 14
9172	B	Belden avenue	North Clark	Halsted	487 84
9173	B	Ashland boulevard	West Twelfth	West Twenty-second	169 50
9189	B	West Monroe	Green	Western avenue	1,103 59
9190	B	Blue Island avenue	Ashland boulevard	Western avenue	8,026 90
9191	B	West Lake	Rockwell	Homan avenue	2,862 28
9192	B	Sanger	Archer avenue	Twenty-sixth	122 00
9193	E	Laurel	Douglas avenue	Egan avenue	892 70
9194	B	Greenwich	Robey	Leavitt	323 50
9195	B	Elias	Archer avenue	Lyman	346 69
9196	E	Ashland avenue	West fork South branch Chicago River	C. & A. R. R.	382 64
9197	B	Churchill	Robey	Leavitt	391 71
9199	B	Irving avenue	West Polk	West Taylor	127 16
9225	B	Wood	West Harrison	Blue Island avenue	859 66
9226	B	May	West Eighteenth	West Twenty-second	315 04
9227	B	Hickory	Fuller	Cologne	660 93
9228	B	Butler	Twenty-fourth	Twenty-ninth	514 45
9230	B	Thirty-third	Archer avenue	Ashland avenue	404 45
9231	B	Thirty-second	Portland avenue	Emerald avenue	559 23
9232	B	Pearson	North State	Tower place	297 43
9233	B	Aberdeen	West Madison	West Eleventh	375 60
9234	B	Western avenue	West Madison	Ogden avenue	453 93
9255	B	Milwaukee avenue	North avenue	Fullerton avenue	2,692 85
9264	B	North Wells	Division	North Clark	3,197 29
9316	B	Fairfield avenue	Courtland	North avenue	179 10
9317	B	Indiana avenue	Fourteenth	Sixteenth	239 73
9321	B	Warren avenue	C., St. L. & P. R. R.	Homan avenue	1,146 72

9322	B	Leavitt	West Indiana	West Chicago avenue	544 99
9323	B	Thirty-seventh	State	Halsted	802 87
9324	B	Orchard	North avenue	Lincoln avenue	570 25
9325	B	Artesian avenue	West Kinzie	West Ohio	336 44
9326	B	Morgan	West Madison	West Harrison	244 93
9327	B	Honore	West Madison	West Harrison	547 32
9328	B	Ambrose	Lincoln	Leavitt	293 65
9329	N	Carroll avenue	Kedzie avenue	Albany avenue	200 47
9330	B	Francisco	West Madison	Fulton	302 42
9331	B	Parmelee	Oakley avenue	Western avenue	349 80
9332	B	Robey	West Lake	West Chicago avenue	639 24
9333	B	State	Van Buren	Twenty second	4,400 33
9334	B	Hinman	Blue Island avenue	Robey	438 51
9335	B	West Ohio	Ashland avenue	Lincoln	574 14
9338	B	West Twelfth	Canal	Ashland avenue	1,147 09
9339	B	Alexander	Wentworth avenue	Stewart avenue	140 80
9340	B	Flournoy	Campbell avenue	Rockwell	422 62
9341	B	Lincoln	West Madison	West Nineteenth	1,693 88
9342	B	Winchester avenue	West Madison	West Polk	1,097 12
9343	B	Fulton	Halsted	Western avenue	1,560 19
9344	N	Cork	Ashland avenue	Paulina	129 58
9345	B	Canal	West Twelfth	West Eighteenth	409 34
9346	B	Paulina	Wabansia avenue	Armitage avenue	343 78
9375	B	Western avenue	West Division	North avenue	508 48
9376	B	Samuel	West Chicago avenue	West Division	231 71
9377	S	West Twenty-eighth	Lawndale avenue	Central Park avenue	180 30
9378	B	Whitehouse	Lawndale avenue	Central Park avenue	363 37
9379	W	Central Park avenue	West Twenty-sixth	West Twenty seventh	210 87
9380	E	Central Park avenue	West Twenty-sixth	West Thirty-first	769 84
9381	B	Cortland	Campbell avenue	Kedzie avenue	534 08
9382	B	Clifton Park avenue	West Twenty-second	West Twenty-sixth	654 88
9383	N	Grand avenue	Central Park avenue	Homan avenue	553 02
9384	B	West Twenty-seventh	Lawndale avenue	Central Park avenue	271 46
9387	B	Curtis	West Madison	May	648 95
9388	B	Richmond	West Chicago avenue	Augusta	286 75
9395	B	Sherman place	Pine	Western terminus	112 10

STATEMENT OF ASSESSMENTS FOR LAYING PLANK SIDEWALKS—CONTINUED.

No of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
9396	B	Halsted	North branch of Chicago River	Division	$ 702 99
9397	B	Hudson avenue	Sigel	Center	515 84
9398	B	West Adams	Rockwell	Sacramento avenue	748 84
9399	B	Austin avenue	Morgan	Noble	597 79
9400	B	West Jackson	Western avenue	Kedzie avenue	1,299 58
9401	B	Hickory avenue	Division	Blackhawk	232 22
9402	B	Cologne	Lock	Hickory	572 19
9403	B	West Van Buren	Canal	Halsted	989 54
9404	B	Austin avenue	Jefferson	Morgan	1,121 02
		Total			$283,955 96

STATEMENT OF ASSESSMENTS FOR THE ERECTING OF GAS LAMP POSTS.

No. of Warr'nt	No. of Posts	NAME OF STREET.	FROM	TO	AMOUNT.
8603	8	Leavitt	Thompson	North avenue	$ 242 00
8646	8	Oakley avenue	Ogden avenue	West Thirteenth	242 00
8665	2	West Ohio	De-plaines	Union	65 50
8666	4	Sibley	West Harrison	Vernon Park place	121 00
8667	9	Hermitage avenue	West Taylor	West Twelfth	272 25
8668	5	Aberdeen	West Taylor	West Eleventh	151 25
8669	3	Falls	Washington boulevard	Park avenue	90 75
8692	3	Randolph	Wabash avenue	Michigan avenue	90 75
8716	5	Bickerdike	West Indiana	West Ohio	151 25
8717	3	Brown	West Fourteenth	Wright	90 75
8718	7	Hermitage avenue	West Polk	West Taylor	211 75
8719	16	Henry	Morgan	Center avenue	484 00
8720	30	Wilcox avenue	Rockwell	Sacramento avenue	877 50
8721	14	Henry	Loomis	Ashland avenue	423 50

8722	8	Marshfield avenue	West Polk	West Taylor	242 00
8723	57	West Twenty-second	Ashland avenue	Western avenue	1,610 25
8727	5	North State	Kinzie	Erie	151 25
8728	3	Fifth avenue	Madison	Adams	90 75
8729	2	Thirty-fourth	State	Dearborn	60 50
8730	6	Thirty-fourth	Halsted	Auburn	181 50
8731	7	Michigan avenue	Randolph	Jackson	211 75
8732	14	Dayton	Willow	Centre	423 50
8733	23	Fifth avenue	Twenty-sixth	Thirty-first	695 75
8734	3	South Water	Franklin	Lake	90 75
8735	4	Superior	Kingsbury	Roberts	121 00
8736	5	West Ohio	Ashland avenue	Paulina	151 25
8769	2	Ritchie place	Goethe	Banks	65 50
8770	2	Spring	La Salle	Wentworth avenue	65 50
8771	11	Fifth avenue	Douglas avenue	Thirty-seventh	332 00
8827	5	Lincoln	West Van Buren	West Congress	151 25
8828	55	Western avenue	Ogden avenue	West Twenty-second	1,498 75
8843	3	Crittenden	Noble	Currier	90 75
8844	6	Sennott place	Elizabeth	North Center avenue	181 50
8845	15	Bradley	Holt	Elston avenue	453 75
8846	6	Oakley avenue	West Kinzie	West Indiana	181 50
8847	15	Hastings	Ashland avenue	Wood	453 75
8848	4	Chase	West Chicago avenue	Cornell	121 00
8849	15	Wade	Crittenden	Elston avenue	453 75
8850	6	Temple	West Huron	West Chicago avenue	181 50
8851	5	Rose	West Chicago avenue	Cornell	151 25
8852	6	Snell	West Huron	West Chicago avenue	181 50
8853	4	Park	Wood	Lincoln	126 00
8875	14	West Jackson	Green	Hoyne avenue	423 50
8876	6	Potomac avenue	Lincoln	Robey	181 00
8877	30	West Adams	Rockwell	Sacramento avenue	847 50
8881	7	Loomis	Blue Island avenue	West Twenty-first	211 75
8882	7	Shober	North avenue	Wabansia avenue	211 75
8883	28	Samuel	West Chicago avenue	West Division	847 00
8884	6	West Thirteenth	Blue Island avenue	Waller	181 50
8885	9	Laflin	West Twelfth	West Fifteenth	272 25

STATEMENT OF ASSESSMENTS FOR THE ERECTING OF GAS LAMP POSTS.

No. of Warr'nt	No. of Posts.	NAME OF STREET.	FROM	TO	AMOUNT.
8886	13	Blackhawk	Larrabee	Halsted	$ 393 25
8887	9	Frank	Blue Island avenue	Waller	272 25
8888	15	West Fifteenth	Loomis	Ashland avenue	462 75
8889	13	West Fifteenth	Canal	Halsted	393 25
8890	17	Leavitt	West Lake	West Ohio	514 25
8891	3	Johnson	West Twenty-first	West Twenty-second	90 75
8892	9	Campbell avenue	West Madison	West Lake	272 25
8893	6	Erie	St. Clair	600 feet east	181 50
8894	60	West Thirteenth	Ashland avenue	Ogden avenue	1,695 00
8895	25	Wood	West Twelfth	West Fifteenth	756 25
8896	16	Gurley	Blue Island avenue	Center avenue	484 00
8897	3	Margaret	West Fourteenth	West Fifteenth	90 00
8898	14	West Fourteenth	Ashland avenue	Wood	423 50
8899	44	Colorado avenue	West Madison	West Jackson	1,243 00
8900	5	Gross Terrace	West Madison	Colorado avenue	151 25
8901	5	George	Carpenter	Elston avenue	151 25
8902	4	Elizabeth	West Indiana	West Ohio	121 00
8909	9	North Market	Schiller	North avenue	272 25
8958	22	Vedder	Division	Halsted	675 00
8959	6	North Franklin	North avenue	Eugenie	181 50
8960	3	Locust	North Market	Sedgwick	90 75
9070	3	West Sixteenth	Johnson	Brown	90 75
9071	59	Laurel	Thirty-first	Egan avenue	1,607 75
9072	20	Leavitt	West Division	Le Moyne	565 00
9073	17	Winchester avenue	West Polk	West Twelfth	480 25
9074	9	Wallace	Archer avenue	Twenty-fifth place	272 25
9075	5	McReynolds	Paulina	Wood	151 25
9076	11	Fifth avenue	Thirty-first	Thirty-third	332 75
9077	8	Twenty-second place	Wentworth avenue	Archer avenue	242 00
9078	5	Cleaver	Milwaukee avenue	West Division	151 50
9079	6	West Superior	Ashland avenue	Paulina	181 50

9080	6	Lee place	Robey	Hoyne avenue	181 50
9081	9	Marion place	West Division	Ellen	272 25
9082	9	Bickerdike	West Ohio	West Chicago avenue	272 25
9083	6	Alexander	Wentworth avenue	Portland avenue	181 50
9084	12	Vernon avenue	Thirty-seventh	Egan avenue	363 00
9085	14	West Fifteenth	Ashland avenue	Wood	423 50
9086	9	Menomonee	North Wells	Sedgwick	272 25
9087	3	Pratt	Sangamon	Morgan	90 75
9088	74	Wallace	Twenty-sixth	Egan avenue	1,979 50
9117	8	Olive	West Taylor	West Twelfth	242 00
9118	7	Paulina	West Taylor	West Twelfth	211 75
9119	8	West Seventeenth	Paulina	Wood	242 00
9120	8	Vernon Park place	Centre avenue	Sibley	242 00
9121	14	Western avenue	West Twenty-second	Laughton	423 50
9122	13	Henry	Ashland avenue	Wood	393 25
9123	7	Lincoln	West Taylor	West Twelfth	211 75
9124	2	Elizabeth	West Ohio	West Erie	60 50
9125	5	Owosco	Western avenue	Western terminus	151 25
9126	10	Hudson avenue	Sigel	Blackhawk	302 50
9127	3	Paulina	Hermitage avenue	about 300 feet North	90 75
9128	10	Burling	North avenue	Willow	302 50
9129	9	California avenue	West Van Buren	West Harrison	272 25
9130	7	Sacramento avenue	Wilcox avenue	West Jackson	211 75
9154	18	California avenue	West Madison	Fulton	544 50
9155	45	Walnut	California avenue	Homan avenue	1,271 25
9156	35	Butterfield	Thirty-third	Egan avenue	988 75
9157	73	Armitage avenue	Elston avenue	Stave	1,989 25
9158	32	West Division	Western avenue	California avenue	904 00
9187	14	Paulina	West Twelfth	West Fifteenth	423 50
9188	13	Van Buren	Wabash avenue	Franklin	393 25
9223	4	Loomis	West Nineteenth	West Twenty-first	121 00
9224	12	Fullerton avenue	Clybourn avenue	North branch Chicago River	363 00
9288	25	Sawyer avenue	Ogden avenue	West Twenty-second	756 25
9289	23	Kedzie avenue	Ogden avenue	West Twenty-second	695 75
9390	22	Spaulding avenue	Ogden avenue	West Twenty-second	675 50
9291	24	Lawndale avenue	Ogden avenue	West Twenty-fourth	726 00

STATEMENT OF ASSESSMENTS FOR THE ERECTING OF GAS LAMP POSTS—CONTINUED.

No. of Warr'nt	No. of Posts.	NAME OF STREET.	FROM	TO	AMOUNT.
9292	30	Central Park avenue	Ogden avenue	West Twenty-fourth	$ 847 50
9293	26	Millard avenue	Ogden avenue	West Twenty-fourth	786 50
9294	50	Ogden avenue	Albany avenue	Lawndale avenue	1,412 50
9295	2	Lytle	Vernon Park place	Macalister place	60 50
9296	6	Nebraska	Laflin	Ashland avenue	181 50
9359	5	Kedzie avenue	West Madison	West Monroe	151 25
9360	8	Talman avenue	West Lake	Fulton	242 00
9361	3	Austin avenue	Western avenue	Artesian avenue	90 75
9362	8	Washburn avenue	Hoyne avenue	Leavitt	242 00
9363	3	Hoyne avenue	West Twelfth	Washburn avenue	90 75
9364	3	Calumet avenue	Egan avenue	about 300 feet north	90 75
9368	14	Fremont	Willow	Center	423 50
9369	11	Osgood	Center	Webster avenue	332 75
9370	14	Sheffield avenue	Willow	Center	423 50
9390	18	Turner avenue	Ogden avenue	West Twenty-second	544 50
9412	14	Howe	Willow	Center	423 50
9413	6	Jay	Webster avenue	Belden avenue	181 50
		Total			$52,171 50

STATEMENT OF ASSESSMENTS FOR ERECTING OIL LAMP POSTS.

No. of Warr'nt	No. of Posts.	NAME OF STREET.	FROM	TO	AMOUNT.
8597	7	Joseph	Archer avenue	Hickory	$ 69 65
8598	7	Mary	Archer avenue	Hickory	69 65
8599	14	Lundy's lane	Douglas avenue	Thirty-seventh	139 30
8600	14	Long John	Douglas avenue	Thirty-seventh	139 30
8601	24	Honore	Douglas avenue	Egan avenue	238 80
8602	8	Lime	Archer avenue	Twenty-seventh	79 60

8604	10	Robey	West Twelfth	West Fourteenth	99 50
8605	10	Hoyne avenue	West Twelfth	West Fourteenth	99 50
8606	2	Leavitt	West Twelfth	Thirteenth place	25 90
8607	4	Nutt	West Nineteenth	West Twentieth	47 80
8608	5	Oakley avenue	West Thirteenth	Wisconsin Central Railroad	54 75
8609	4	Willis court	West Thirteenth	Wisconsin Central Railroad	47 80
8610	4	Raleigh	West Thirteenth	Wisconsin Central Railroad	47 80
8611	6	Lunn	Western avenue	Western Terminus	65 70
8612	5	Thirty-second	Ashland avenue	Paulina	59 75
8613	30	Lincoln	West Sixteenth	Blue Island avenue	298 50
8614	41	West Eighteenth	Wood	Western avenue	407 95
8615	25	Richmond	West Chicago avenue	West Division	248 75
8616	40	West Twentieth	Wood	Western avenue	398 00
8639	12	Walnut	Kedzie avenue	Homan avenue	119 40
8640	12	Park avenue	Kedzie avenue	Homan avenue	119 40
8641	5	Mill	Ashland avenue	Paulina	59 75
8642	5	Thirty-third	Ashland avenue	Paulina	59 75
8643	4	Market square	Archer avenue	Ashland avenue	47 80
8644	3	West Seventeenth	Fisk	Center avenue	38 85
8645	16	Lincoln	West Thirteenth	West Sixteenth	159 20
8647	16	Talman avenue	West Twelfth	West Fifteenth	159 25
8648	3	Lawndale avenue	Chicago, Burlington and Quincy Railroad	West Twenty-third	38 85
8649	13	Fox	Thirty-first	Thirty-third	129 35
8650	36	West Congress	Rockwell	Albany avenue	358 20
8651	8	Troy	Colorado avenue	West Van Buren	87 60
8652	11	Twentieth	La Salle	Grove	109 45
8970	13	West Twelfth	Western avenue	Albany avenue	130 09
	417	Posts. Total			$4,254 94

STATEMENT OF ASSESSMENTS FOR STREET OPENINGS AND WIDENINGS.

No. of Warr'nt	Imp've-ment.	NAME OF STREET.	FROM	TO	AMOUNT.
8552	O	Alley	In Starr's subdivision in	North addition to Chicago	$2,527 88
8553	O	Millard avenue	Ogden's addition	Douglas Park boulevard	9,498 71
8554	O	Alley	In Block 5	Morris and Others' subdivision	1,332 02
8555	O	Chase court	Southern terminus	Blue Island avenue	3,681 00
8556	O	Alley	Fairfield avenue	California avenue	1,018 85
8557	O	Alley	Through Block 28	Duncan's addition	4,748 52
		Total			$22,806 98

STATEMENT OF ASSESSMENTS FOR LAYING STONE SIDEWALKS.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
8583	B	Forrest avenue	Thirty-first	Douglas avenue	$10,731 82
8675	N	College place	Rhodes avenue	Cottage Grove avenue	1,033 20
9091	B	North Clark	Chicago River	Chicago avenue	28,368 56
9318	B	Monroe	Market	Michigan avenue	4,057 79
9319	B	Quincy	Franklin	Fifth avenue	521 28
9320	B	La Salle	Lake	Randolph	1,461 11
		Total			$46,173 76

STATEMENT OF ASSESSMENTS FOR ERECTING DYOTT CHAMPION LAMPS.

No. of Warr'nt	No. of Lamps.	DESCRIPTION.	AMOUNT.
9090	139	No. 20 Dyott Champion lamps on Warren avenue, from Ogden avenue to Homan avenue	$1,772 26
9358	90	No. 29 Dyott Champion lamps on Calumet avenue, from Eighteenth street to Douglas avenue	1,104 00
		Total	$2,876 26

STATEMENT OF ASSESSMENTS FOR STREET OPENINGS AND WIDENINGS.

No. of Warr'nt	Imp'vement.	NAME OF STREET.	FROM	TO	AMOUNT.
8552	O	Alley	In Starr's subdivision in	North addition to Chicago	$2,527 88
8553	O	Millard avenue	Ogden's addition	Douglas Park boulevard	9,498 71
8554	O	Alley	In Block 5	Morris and Others' subdivision	1,332 02
8555	O	Chase court	Southern terminus	Blue Island avenue	3,681 00
8556	O	Alley	Fairfield avenue	California avenue	1,018 85
8557	O	Alley	Through Block 28	Duncan's addition	4,748 52
		Total			$22,806 98

STATEMENT OF ASSESSMENTS FOR LAYING STONE SIDEWALKS.

No. of Warr'nt	Side of Street.	NAME OF STREET.	FROM	TO	AMOUNT.
8583	B	Forrest avenue	Thirty-first	Douglas avenue	$10,731 82
8675	N	College place	Rhodes avenue	Cottage Grove avenue	1,033 20
9091	B	North Clark	Chicago River	Chicago avenue	28,368 56
9318	B	Monroe	Market	Michigan avenue	4,057 79
9319	B	Quincy	Franklin	Fifth avenue	521 28
9320	B	La Salle	Lake	Randolph	1,461 11
		Total			$46,173 76

STATEMENT OF ASSESSMENTS FOR ERECTING DYOTT CHAMPION LAMPS.

No. of Warr'nt	No. of Lamps.	DESCRIPTION.	AMOUNT.
9090	139	No. 20 Dyott Champion lamps on Warren avenue, from Ogden avenue to Homan avenue	$1,772 26
9358	90	No. 29 Dyott Champion lamps on Calumet avenue, from Eighteenth street to Douglas avenue	1,104 00
		Total	$2,876 26

SUMMARY.

Total Assessments for Wood Block Pavement, including Curbing and Filling:		
North Division	$ 481,700 26	
South Division	492,700 31	
West Division	1,409,178 36	
		$2,383,578 93
Total Assessments for Miscellaneous Street and Alley Improvements:		
North Division	17,366 82	
South Division	315,294 50	
West Division	179,371 78	
		512,033 10
Total Assessments for Laying Private Drains:		
North Division	18,289 50	
South Division	26,411 50	
West Division	91,686 25	
		136,387 25
Total Assessments for Laying Water Service Pipes:		
North Division	27,532 30	
South Division	40,704 90	
West Division	143,480 90	
		211,718 10
Total Assessments for Street and Alley Openings and Widenings:		
North Division	2,527 88	
South Division	....	
West Division	20,279 10	
		22,806 98
Total Assessments for Laying Plank Sidewalks:		
North Division	36,249 72	
South Division	62,646 53	
West Division	185,059 71	
		283,955 96
Total Assessments for Erecting Gas Lamp Posts:		
North Division	7,560 00	
South Division	6,019 00	
West Division	38,592 50	
		52,171 50

Total Assessments for Erecting Oil Lamp Posts:		
North Division	$........	
South Division	1,202 15	
West Division	3,052 79	
		$4,254 94
Total Assessments for Laying Stone Sidewalks:		
North Division	28,368 56	
South Division	17,805 20	
West Division	....	
		46,173 76
Total Assessments for Erecting "Dyott Champion Lamps:"		
North Division	....	
South Division	1,104 00	
West Division	1,772 26	
		2,876 26
Grand total		$3,655,956 78

The following list shows the total of assessments made in each year since 1861:

For the year ending April 1, 1862	$ 42,635 49
For the year ending April 1, 1863	46,493 67
For the year ending April 1, 1864	389,169 31
For the year ending April 1, 1865	103,576 35
For the year ending April 1, 1866	802,574 56
For the year ending April 1, 1867	317,206 18
For the year ending April 1, 1868	1,354,436 48
For the year ending April 1, 1869	2,395,683 03
For the year ending April 1, 1870	2,836,852 48
For the year ending April 1, 1871	2,359,835 89
For the year ending April 1, 1872	62,222 25
For the year ending April 1, 1873	
For the year ending April 1, 1874	749,460 27
For the year ending April 1, 1875	723,254 42
For the nine months ending January 1, 1876	60,585 72
For the year ending January 1, 1877	1,516,081 07
For the year ending January 1, 1878	124,498 48
For the year ending January 1, 1879	284,900 45
For the year ending January 1, 1880	588,963 44
For the year ending January 1, 1881	980,895 50
For the year ending January 1, 1882	1,227,169 71
For the year ending January 1, 1883	1,395,372 98
For the year ending January 1, 1884	2,232,757 04
For the year ending January 1, 1885	2,857,905 28
For the year ending January 1, 1886	2,889,544 80
For the year ending January 1, 1887	3,307,567 99
For the year ending January 1, 1888	3,160,474 67
For the year ending January 1, 1889	3,655,956 78
Total for twenty-eight years	$36,486,074 29

Respectfully submitted,

H. J. JONES,

Superintendent Special Assessments.

Book-keeper's Statement

BOOK-KEEPER'S STATEMENT

FOR 1888.

CHICAGO, Dec. 31, 1888.

HON. GEORGE B. SWIFT,
Commissioner of Public Works.

DEAR SIR: — I herewith respectfully submit statement in detail of the Receipts and Expenditures of your Department for the year 1888.

WATER FUND.

RECEIPTS.

Acc't Current Rents.	
Amount collected during the year for current water rents, assessed...	$1,039,599 73
Amount collected during the year for water rents, meter measurement...........	517,517 05
Carried forward,	$1,557,116 78

Brought forward,		$1,557,116 78
Acc't Water Service Cocks.		
Amount received for tapping permits..	$38,136 05	
Amount received for plumbers' licenses	273 00	
Amount received for labor and material...........	2 25	
		38,411 30
Acc't Meter and Private Work.		
Amount received for labor and material used in laying and repairing water supply pipes for elevator and general supply of water, also for changing location of hydrants, stop-cocks etc,.	$23,958 67	
Amount received for meters, fittings and labor........	14,543 05	
Amount received for repairing meters.	4,328 31	
		42,830 03
Acc't North Pumping Works.		
Amount received for old metal sold...	$3,204 75	
Amount received from voucher deposited back.....	125 20	
		3,329 95
Carried forward,		$1,641,688 06

Brought forward,		$1,641,688 06	
Acc't Water Works Shop.			
Amount received for scrap iron sold...		1,141 67	
Acc't Lake Tunnel Crib.			
Amount received for tug service......		380 00	
Miscellaneous Receipts.			
Amount received for rent of Rookery lot..............	$35,000 03		
Amount advanced by private parties to lay water mains...........	16,122 00		
Amount deposited by private parties for loan of hydrant wrenches..	560 00		
Amount received for interest on investment of water funds........	24,371 20		
Amount received for premium on water loan bonds,	5,383 00		
Amount received from Hyde Park..	73 30		
Amount received from pipe yard for scrap iron.......	3,174 31		
		84,683 84	
Total receipts.....			$1,727,893 57

EXPENDITURES.

Acc't Water Pipe Extension.

Paid for—

Labor	$127,320	86
Teaming	8,572	34
Tools and repairing	218	66
Gasket and packing	535	00
Lumber	1,960	77
Horsekeeping	219	25
Hydrant and stop-cock chambers	6,108	23
Printing and stationery	25	00
Hardware	368	55
Car fare	28	57
Oil and grease	58	50
Blacksmithing	48	25
Valves	1,221	58
Blasting rock	1,956	00
Lanterns, globes etc	27	28
Plumbing	1,124	84
Coal	48	02
Brick	4,443	60
Cement	1,925	55
Sewer pipe	300	00
Lead	31,914	08
Veterinary services	9	00
Water pipe and castings	188,106	14
Salamander grates	6	21
Roofing paper	150	00
Hickory poles	7	00
Stabling expenses	1,436	26
Carried forward,	$378,139	54

Brought forward,	$378,139 54	
Hydrants and stop-cocks	25,038 38	
Horse blankets	10 50	
Repairing scales	21 23	
Sand	279 50	
Rope	2 60	
One horse	155 00	
Advertising	34 31	
Maps	26 00	
Lime	11 00	
		$403,718 06
Acc't Water Service Cocks.		
Paid for—		
Labor	$27,882 34	
Tapping machine and taps	1,065 29	
Plumbing	216 18	
Corporation ferrules	7,558 87	
Moving stop-cock boxes	164 25	
Stabling expenses.	1,436 25	
Machine work at shop	224 31	
Printing and stationery	25 00	
Car fares	208 92	
Iron pipe	2 80	
One horse	160 00	
Advertising	28 44	
Cartage	2 25	
Tools	13 05	
Oil	2 05	
Brass plugs	68 75	
Express charges	2 75	
Gasket and washers.	7 20	
		39,068 70
Carried forward,		$442,786 76

Brought forward,		$442,786 76

Acc't North Pumping Works.

OPERATING EXPENSES.

Paid for—

Salaries of employes and labor	$52,350 03	
Coal	67,039 32	
Oil and grease	1,087 81	
Ice	120 00	
Oatmeal	10 12	
Rubber boots	18 30	
Gas	1,216 80	
Brooms, soap etc	79 16	
Hauling ashes etc	516 39	
Sawdust	6 50	
Hose	85 32	
Boiler compound	51 30	
Stabling expenses	478 75	
Metal polish	30 00	
Waste	350 02	
Repairing wagon	9 05	
Car fare and postage	8 70	
Tools	156 88	
Books and stationery	57 35	
	$123,671 80	

OTHER EXPENSES.

Labor	5,403 20	
Lumber	365 94	
Doors	36 76	
Repairing roof	216 70	
Grass seed	3 04	
Earth filling	125 20	
Sky lights	307 40	
Carried forward,	$130,130 04	$442,786 76

Brought forward,	$130,130 04	$442,786 76
Carpets and furniture	169 83	
Lamps and globes	103 34	
Plumbing	110 30	
Settees for lawn	26 00	
Lawn mower	10 00	
Rope	15 63	
Paving	254 35	
Plastering	3 00	
Paint and oil	309 64	
Iron and hardware	466 86	
Electric light plant	3,353 77	
Castings	2,604 42	
Freight and express charges	93 21	
Boilers, mud drums etc	4,168 52	
Steam cylinders	1,592 50	
Brick	279 67	
ment and lime	54 30	
Sand	23 25	
Steam gauges	33 00	
Indicators etc	274 82	
Fire brick and clay	280 81	
Wire and iron	168 32	
Pipe and fittings	2,013 89	
Valves, cages etc	6,497 18	
Contract work etc	3,708 76	
Gasket and packing	413 57	
Coal for machine shop	1,384 48	
		158,543 46
Carried forward,		$601,330 22

Brought forward,		$601,330 22

Acc't West Pumping Works.

OPERATING EXPENSES.

Paid for—

Salaries of employes	$40,364 54	
Coal	49,826 47	
Cylinder oil	877 46	
Lard oil	32 24	
Lubricating compound	270 06	
Gas	1,483 00	
Repairs to engines	208 27	
Repairs to boilers	659 40	
Fire brick, clay and tile	124 50	
Rubber and packing	579 77	
Rubber valves	1,102 28	
Pipes and fittings	160 45	
Castings (grate bars etc.)	360 17	
Machine work, blacksmithing and fire tools	1,017 07	
Lumber	44 04	
Hardware, tools etc.	311 57	
Small stores	217 50	
Repairing feed pumps	308 32	
Ice	42 15	
	$97,989 26	

OTHER EXPENSES.

Repairing engine and shafting for machine shop	124 21	
Carried forward,	$98,113 47	$601,330 22

Brought forward,	$98,113 47	$601,330 22
Repairing large Fairbanks scales	117 34	
Repairs to buildings and surroundings	550 32	
Labor on buildings and surroundings	2,678 52	
	$101,459 65	
Deduct bills unpaid at closing of books	2,493 97	
		98,965 68

Acc't Central Pumping Works.

CONSTRUCTION.

Paid for—

Labor	$16,849 36	
Printing	24 25	
Advertising	272 88	
Tools	37 00	
Teaming	274 97	
Rubber valves	11 89	
Blue prints	41 44	
Removing earth	2,760 00	
Repairing pump	4 05	
Plumbing	3 64	
Derrick irons	208 00	
Specifications	8 10	
Bricks	3,745 87	
Lumber	1,595 05	
Planing lumber	36 67	
Coal	102 23	
Hardware	98 93	
Repairing boiler	87 24	
Foundation	8,939 69	
Engines (on account)	25,000 00	
Carried forward,	$60,101 26	$700,295 90

Brought forward,	$60,101 26	$700,295 90
Traveling expenses	6 30	
Cement...........	220 35	
Engineers' supplies.	113 64	
Steam-fitting......	3 30	
Oil..............	16 48	
Ground rent.......	10 42	
Sand.............	360 00	
Dimension stone...	1,832 60	
Roofing paper.....	1 91	
Inks and colors....	18 20	
		62,684 46

Acc't South Side Pumping Works.

CONSTRUCTION.

Paid for—

Labor............	$10,080 70	
Lumber...........	370 34	
Teaming..........	56 43	
Coal..............	94 50	
Brick.............	3,218 35	
Rubber goods......	14 25	
Oil..............	19 43	
One engine........	225 00	
Hardware.........	41 35	
Cement..........	176 75	
Pails.............	2 00	
Iron pipe.........	9 05	
Repairing pump....	16 65	
Sand.............	33 75	
Tools............	20 00	
Plumbing.........	36 25	
Blue prints and stationery.	17 80	
Cleaning vaults....	155 00	
		14,587 60
Carried forward,		$777,567 96

Brought forward,		$777,567 96

Acc't New Lake Tunnel.

Paid for—		
Labor	$9,729 05	
Books, printing and stationery	59 91	
Office supplies	14 32	
Instruments and tools	1,266 76	
Stove and pipe	43 03	
Coal	45 40	
Lamps and lanterns	6 12	
Drilling holes	702 60	
Lumber	718 61	
Paint and oil	63 41	
Iron pipe and fittings	309 26	
Cement	159 10	
Iron work and hardware	121 58	
Car fare	14 83	
Tunneling	183,865 24	
Plumbing	26 18	
Teaming	5 95	
Roofing office	43 40	
Sinking well	324 00	
Engineer supplies	60 60	
		197,579 35

Acc't New Land Tunnel.

Paid for—		
Printing, stationery, blue prints etc.	$ 66 37	
Labor	24,056 30	
Car fare	15 22	
Carried forward,	$24,137 89	$975,147 31

Brought forward,	$24,137 89	$975,147 31
Lumber....	225 05	
Engineer supplies..	53 22	
Hardware.........	160 00	
Paint and oil.......	73 68	
Teaming..........	73 31	
Coal..............	248 50	
Brick............	1,848 50	
Cement and lime...	543 20	
Hoisting machine..	200 00	
Repairing tools....	19 05	
Sand......	213 75	
Plumbing..........	49 84	
Removing dirt.....	724 62	
Tarred felt.... ...	3 32	
Planing lumber....	45 80	
Iron work.........	222 13	
Machine work at Shop...........	255 60	
		29,097 46

Acc't Water Works Repairs.

Paid for—

Labor.............	$87,244 08	
Tools........... ..	19 15	
Gaskets and packing.............	47 08	
Lumber...........	713 78	
Teaming and horse-keeping.........	4,232 83	
Blacksmithing.....	77 20	
Hardware and iron.	163 61	
Books, printing and stationery.......	15 69	
Paint and oil.......	34 92	
Carried forward,	$92,548 34	$1,004,244 77

Brought forward,	$92,548 34	$1,004,244 77
One horse	175 00	
Hickory poles	3 00	
Roofing paper	42 00	
Paving	277 15	
Stabling expenses	478 76	
Lead	680 00	
Water pipe	4,500 00	
Sewer pipe	75 00	
Sand	100 00	
Machine work at shop	6,899 89	
Brick	2,000 00	
Pipe fitting	18 00	
Iron covers	364 26	
Plumbing	557 62	
Repairing scales	6 14	
Maps	3 00	
Lime	5 00	
Salt	95	
Grass seed	2 50	
Veterinary services.	60 00	
Cement	1,050 00	
Advertising	4 62	
		109,851 23

Acc't Meter and Private Work.

Paid for—

Labor	$17,178 87	
Meters and fittings.	7,922 08	
Teaming	148 81	
Rebates	3,811 35	
Rubber goods	80 70	
Iron covers	267 98	
Coal and tar	12 00	
Carried forward	$29,421 79	$1,114,096 00

Brought forward,	$29,421 79	$1,114,096 00
Lumber	377 37	
Iron pipe and castings	326 87	
Valves	779 12	
Meter glasses	10 00	
Printing and stationery	54 75	
Paint and oil	12 58	
Hardware	33 30	
Tools	83 34	
Blacksmithing	91 05	
Stabling and horse supplies	988 85	
Freight	20 89	
Chairs	9 25	
Postage	60 00	
Matches and candles	35 83	
Car fare	25 20	
Masonry	53 00	
Plumbing	64 93	
Pails	4 50	
Machine work at shop	2,917 98	
Brick	533 40	
Cement	275 00	
Sand	33 00	
Sewer pipe	37 50	
Water pipe and special castings	1,898 00	
Lead	427 88	
		38,575 38
Carried forward,		$1,152,671 38

Brought forward,		$1,152,671 38
Acc't Lake Tunnel Crib.		
Paid for—		
Labor	$2,640 12	
Rubber goods.....	17 66	
Meals............	431 25	
Engineer supplies..	17 68	
Paint brushes and oil	90 32	
Hardware.........	5 30	
Cement, lime and salt............	24 80	
Coal..............	438 85	
Tug service.......	3,177 00	
Teaming..........	5 95	
Sand	3 00	
Gravel............	10 18	
Lumber	62 00	
Lamps and globes	168 00	
Glass and putty...	6 97	
Carpenter work ...	30 25	
Pipe fitting........	40 70	
Water works shop work...........	27 15	
		7,030 86
Acc't Lake Crib Protection.		
Paid for—		
Blue prints........	$ 1 35	
On account of breakwater......	113,465 00	
		113,466 35
Acc't New Shore Inlet.		
Paid for—		
Labor	$363 24	
Electric light......	394 56	
Carried forward,	$757 80	$1,273,168 59

Brought forward,	$ 757 80	$1,273,168 59
Pier	25,264 63	
ghthouse	1,117 25	
ement	36 00	
umber	91 46	
e prints	1 71	
Teaming	11 90	
Pipe and fittings	5 54	
eflectors	90 00	
ardware	70	
ick	34 00	
ll	200 00	
achine work at shop	82 50	
		27,693 49

Acc't Water Fund Miscellaneous Expenses.

Paid for—

Salaries and labor	$9,267 07	
Horse keeping and shoeing	464 90	
Type writing	10 00	
Books, printing and stationery	763 32	
Traveling expenses	468 45	
Car fares	142 29	
Pay wagon supplies	83 33	
Window shades	4 38	
Advertising	189 80	
Postage	50 43	
Plumbing	20 85	
Lumber	41 25	
Hardware	9 45	
Carried forward,	11,515 52	$1,300,862 08

Brought forward,	$11,515 52	$1,300,862 08
Express charges...	80	
Royalty	10 00	
		11,526 32
Acc't Water Office Expenses and Salaries.		
Paid for—		
Books, printing and stationery.......	$1,384 52	
Car fare...........	1,343 01	
Binding papers....	79 56	
Matches and candles	19 14	
Office furniture....	30 79	
Tape lines and tools	157 14	
Steam-fitting......	51 30	
Hardware.........	48 07	
Postage...........	788 12	
Repairing tools....	18 40	
Drawing material..	25 87	
Hyde Park........	23 95	
Signs for clerks' windows	18 00	
Scales	1 60	
Directory.........	5 00	
Advertising.......	43 83	
Maps.............	40 00	
Window shades....	7 72	
Tin boxes.........	10 00	
	$ 4,096 02	
Salaries, collecting rents assessed...	39,911 80	
Salaries, collecting meter rents	15,764 36	
Salaries of inspectors	33,488 50	
Carried forward,	$93,260 68	$1,312,388 40

Brought forward,	$93,260 68	$1,312,388 40
Salaries of assessors and draughtsmen	16,044 97	
Salaries shut off men	16,437 75	
		125,743 40

Acc't Water Proportional Office Expenses and Salaries.

Paid for—

Books, printing and stationery	$1,273 40	
Car fare	137 51	
Postage	236 10	
Binding papers	19 50	
Newspapers	4 53	
Money bag	6 00	
Express charges	1 50	
One-third salaries of Commissioner, secretary, bookkeeper and others	5,075 00	
		6,753 54

Miscellaneous Accounts.

Paid for—

Real estate	$148,221 25	
Interest on water loan	262,124 50	
Investment in city bonds	532,000 00	
Money advanced refunded	19,725 42	
Rebates for hydrant wrenches	460 00	
Water rents overpaid refunded	137 08	
Carried forward,	$962,668 25	$1,444,885 34

Brought forward,	$962,668 25	$1,444,885 34	
Engineering for new lake crib........	75 00		
Completion of north pumping works extension	527 00		
Increase of material on hand.........	13,286 46		
		976,556 71	
Total Expenditures,			$2,421,442 05

SEWERAGE FUND.

RECEIPTS.

Amount received for drain permits....	$41,282 50	
Amount received for drain-layers' licenses	815 00	
Amount received for labor............	174 83	
		$42,272 33
Amount appropriated by City Council for cleaning sewers and catch-basins...........	$45,000 00	
Amount appropriated by City Council for repairing sewers and catch-basins...........	6,000 00	
Amount appropriated by City Council for raising catch-basins to grade...........	35,000 00	
Carried forward,	$86,000 00	$42,272 33

Brought forward,	$86,000 00	$42,272 33
Amount appropriated by City Council for sewerage sinking fund.	500 00	
Amount appropriated by City Council for river improvement sinking fund........	500 00	
Amount appropriated by City Council for sewerage office salaries....	17,100 00	
Amount appropriated by City Council for sewerage funds, proportion of commissions, office expenses, and salaries......	6,666 66	
Amount appropriated by City Council for new sewers.	229,000 00	
Amount appropriated by City Council for refunding money advanced.	14,300 00	
Amount appropriated by City Council for probable deficiency in collection of taxes..	3,381 34	
		357,448 00
Carried forward,		$399,720 33

Brought forward,	$399,720 33	
Amount advanced by sundry parties for constructing sewers..........	9,745 00	
Amount received for labor and material on account of sewers, North Division............	604 50	
Amount received for labor and material on account of sewers, South Division	1,263 51	
Amount received for labor and material on account of sewers, West Division	3,993 79	
Amount received from special assessment fund etc.............	5,809 81	
Total receipts.....		$421,136 94

EXPENDITURES.

Acc't Sewers, North Division.

Paid for—

Labor.............	$2,121 55
Catch-basins..	2,931 51
Wooden covers....	190 99
Cement...........	2 36
Car fare and postage.............	75 00
Teaming..........	363 75
Sewer pipe........	18 42
Carried forward,	$5,703 58

Brou t forward,	$5,703 58	
Paving............	45 00	
Advertising.......	4 19	
Constructing sewers (contractors)....	12,332 75	
		$18,085 52

Acc't Sewers — South Division.

Paid for—

Labor.	$4,278	
Masonry....... .	8 00	
Coal...........	7	
Advertising .	4	
Plumbing. ...		
Catch-basir		
Wooden	271	
Sand.......	60	
Brick		
Cement.	46	
Car fare and postage	150 00	
Teaming..........	438 50	
Sewer pipe........	193 56	
Constructing sewers (contractors)....	19,706 02	
		31,103 44

Acc't Sewers, West Division.

Paid for—

Labor.............	$12,459 07	
Printing...........	42 00	
Advertising.......	7 83	
Plumbing.........	1,083 40	
Paving.	132 75	
Catch-basins......	14,288 27	
Wood covers......	1,315 41	
Carried forward,	$29,328 73	$49,188 96

Brought forward,	$29,328 73	$49,188 96
Sand	100 00	
Brick	149 95	
Cement	115 64	
Car fare and postage	250 00	
Teaming	964 50	
Sewer pipe	630 00	
Constructing sewers (contractors)	153,701 59	
		185,240 41

Acc't House Drains.

Paid for—

Labor	$21,031 79	
Books, printing and stationery	146 85	
Draughting material	28 32	
Re-laying drains	109 73	
Repairing hektograph	5 25	
Car fare	13 26	
Fees refunded	25 00	
Teaming	191 50	
Plumbing	50 95	
Office furniture	30 83	
Sewer pipe	5,841 90	
Paving	97 30	
Brick	9 37	
Cement	21 24	
Car fare	394 00	
Depreciation of stock	50 00	
		28,047 29
Carried forward,		$262,476 66

Brought forward,		$262,476 66

Acc't Cleaning Sewers and Catch-basins.

Paid for—

Labor....	$42,011 47	
Teaming..........	9,850 85	
Tools and repairing.	92 71	
Rubber goods......	13 20	
Iron work.........	15 82	
Salt..............	1 25	
Axle grease.......	2 40	
Repairing flushing wagon.........	237 50	
Oil...............	6 44	
Car fare and postage	100 00	
Depreciation of stock...........	104 14	
		52,435 78

Acc't Repairing Sewers and Catch-basins.

Paid for—

Labor.............	$3,800 38	
Plumbing..........	96 50	
Teaming..........	984 00	
Oil......	5 36	
Repairing instrument...........	7 50	
Paving	40 00	
Wooden covers....	3,395 15	
Iron covers........	51 44	
Sand..............	10 00	
Brick.............	429 32	
Cement...........	218 30	
Carried forward,	$9,037 95	$314,912 44

Brought forward,	$9,037 95	$314,912 44
Sewer pipe	79 81	
Depreciation of stock	25 00	
		9,142 76
Acc't Intersections.		
Paid for—		
Labor	$17,530 97	
Oil	7 00	
Repairing scale	35 40	
Iron rails	11 75	
Paving	47 25	
Wooden covers	2,212 19	
Iron covers	11,064 56	
Sand	161 75	
Brick	8,267 08	
Cement	3,542 36	
Car fare and postage	100 00	
Teaming	1,979 00	
Sewer pipe	216 28	
Depreciation of stock	60 00	
		45,235 59
Acc't Sewer Office Salaries.		
Paid salaries of employes		17,002 00
Acc't Proportional Office Expenses and Salaries.		
Paid for—		
Books, printing and stationery	$1,109 16	
Car fare	17 40	
Postage	7 20	
Carried forward,	$1,133 76	$386,292 79

Brought forward,	$1,133 76	$386,292 79	
Map of Chicago...	20 00		
Mimeograph	20 00		
One-third salaries of Commissioner, Secretary, Bookkeeper, and others	4,921 66		
		6,095 42	
Miscellaneous Expenditures.			
Paid—			
River improvement sinking fund.....	$ 500 00		
Sewerage sinking fund............	500 00		
Material on hand...	8,978 57		
Sundry parties for money advanced.	11,388 07		
		21,366 64	
Total expenditures.........			$413,754 85

APPROPRIATION FUND.

RECEIPTS.

Acc't Improved Streets.	
Amount appropriated by City Council..............	$175,000 00
Amount received for paving and inspecting.........	9,825 77
Amount received for use of steam roller	741 25
Amount received for labor............	332 00
Carried forward,	$185,899 02

Brought forward,	$185,899 02	
Amount received for gravel sold......	9 90	
Amount received for stone sold.......	175 88	
Amount received for lumber sold......	14 40	
Amount received for scrap-iron sold...	614 83	
Amount received for earth filling sold.	13 05	
Amount received for wagon sold	5 00	
Amount received for removing pavement......... ..	295 16	
	$187,027 24	
Deduct transferred to "New electric light plant" account......... .	4,482 50	
		$182,544 74

Acc't Unimproved Streets.

Amount appropriated by City Council.........	$115,000 00	
Amount received from sundry parties for constructing sidewalks ...	2,435 85	
Amount received from special assessment fund for constructing sidewalks...........	26,790 81	
		144,226 66
Carried forward,		$326,771 40

Brought forward,		$326,771 40
Acc't Street Permits.		
Amount received for paving and inspecting........	$13,461 86	
Amount received for occupying streets	7,992 00	
Amount received for scale permits....	60 00	
Amount received for vault permits....	18 00	
	$21,531 86	
Deduct, by transfer from "Permit deposits."....	8,475 66	
		13,056 20
Acc't House Moving Permits.		
Amount received for permits issued...		3,676 00
Acc't Bridge and Viaduct Repairs.		
Amount appropriated by City Council.........	$80,000 00	
Amount received for damages to bridg's and viaducts.....	1,383 03	
Amount received from C. & N.-W. R'y Co., towards maintaining State street viaduct...	400 00	
		81,783 03
Carried forward,		$425,286 63

Brought forward,		$425,286 63
Acc't Street Lamps.		
Amount received for old posts sold...	$ 20 00	
Amount received for damages to posts	19 00	
Amount received for oil lamps sold..	5 75	
Amount received for castings sold....	52 78	
Amount received from Comptroller for general repairs	19,376 26	19,473 79
Acc't Public Buildings.		
Amount received from Public Library Fund for extra elevator service..........	$ 553 50	
Amount appropriated by City Council.........	75,538 00	76,091 50
Acc't Jackson Street Viaduct.		
Amount appropriated by City Council.........	$137,700 00	
Amount received from Pennsylvania Co..........	73,975 52	211,675 52
Carried forward,		$732,527 44

Brought forward,		$732,527 44
**Acc't Eighteenth St. Viaduct.*		
Amount received from sundry railroad companies..	$2,655 85	
Amount of voucher deposited back...	1,085 00	
		3,740 85
Acc't Fifth Ave. Approach to Twelfth St. Viaduct.		
Amount received from Chic. & Gr. W'n R. R. Co....		56,268 79
Acc't Twelfth Street Viaduct.		
Amount received from General Fund through Comptroller.....	$20,000 00	
Amount received from railroad Co.'s	585 50	
		20,585 50
**Acc't Thirty-fifth Street Viaduct.*		
Amount received from Pennsylvania Co..........		23,367 52
**Acc't Western Ave. and Kinzie St. Viaduct.*		
Amount of error in City Engineer's pay roll for September, deposited back...........		31 50
Carried forward,		$836,521 60

Brought forward,		$836,521 60
[*]*Acc't Ashland Ave. and Kinzie St. Viaduct.*		
Amount received from C. & N.-W. R'y Co..........		8,656 20
Acc't Dearborn St. Viaduct.		
Amount received from C. & N.-W. R'y Co..........		20,000 00
Acc't Eighteenth Street Bridge.		
Amount received from C. & W. Ind. R. R. Co........		2,855 14
Acc't Canal Pumping Works.		
Amount appropriated by City Council.........	$45,000 00	
Amount received from A., T. & S. Fe R. R. Co.....	1,413 75	
		46,413 75
Acc't Fullerton Ave. Conduit.		
Amount appropriated by City Council.........	$18,000 00	
Amount received for scrap-iron...	116 55	
		18,116 55
Acc't Chicago Harbor.		
Amount appropriated by City Council.........	$51,000 00	
Carried forward,	$51,000 00	$932,563 24

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[*] See page 40 of Commissioner's report.

Brought forward,	$51,000 00	$932,563 24
Amount received for dredging for Union Stock Yard & Transit Co.	898 70	
		51,898 70
Acc't West Division Pound.		
Amount received from Comptroller		1,953 19
Acc't La Salle Street Tunnel.		
Amount received from North Chicago Street R. R. Co.		437 26
Acc't Washington Street Tunnel.		
Amount received from Chicago Passenger R'y Co.		42 50
Acc't Public Benefits.		
Amount appropriated by City Council	$371,618 82	
Amount received from Comptroller	28,132 58	
		399,751 40
Acc't Special Assessments.		
Amount received for cost of making and collecting special assessments.		64,586 67
Carried forward,		$1,451,232 96

Brought forward,		$1,451,232 96
Acc't New Electric Light Plant.		
Amount received from Comptroller	$54,000 00	
Amount received for one electric lamp and post........	124 50	
Amount received for oil barrels sold...	4 00	
		54,128 50
Miscellaneous Appropriations and Receipts.		
Amount appropriated by City Council for sidewalk—intersections ...	$15,000 00	
Amount appropriated by City Council for sidewalk—general repairs...	10,000 00	
Amount appropriated by City Council for Randolph street bridge machinery.........	1,000 00	
Amount appropriated by City Council for Madison street bridge machinery.........	1,000 00	
Amount appropriated by City Council for Deering street bridge....	15,000 00	
Carried forward,	$42,000 00	$1,505,361 46

Brought forward,	$42,000 00	$1,505,361 46
Amount appropriated by City Council for Canal street bridge..........	1,000 00	
Amount appropriated by City Council for Western avenue (N.) bridge.	10,000 00	
Amount appropriated by City Council for Fourteenth street bridge....	30,000 00	
Amount appropriated by City Council for Dearborn street bridge (S. approach).......	30,000 00	
Amount appropriated by City Council for bridge tenders' salaries......	63,575 00	
Amount appropriated by City Council for Indiana street viaduct...	5,000 00	
Amount appropriated by City Council for Ogden Ditch dam......	500 00	
Amount appropriated by City Council for public parks	7,800 00	
Carried forward,	$189,875 00	$1,505,361 46

Brought forward,	$189,875 00	$1,505,361 46	
Amount appropriated by City Council for River electric light plant ...	15,640 00		
Amount appropriated by City Council for Chicago avenue viaduct...	100 00		
Amount appropriated by City Council for salaries ...	92,470 00		
Amount appropriated by City Council for Street Department office expenses........	1,000 00		
Amount appropriated by City Council for Map Office expenses........	600 00		
Amount appropriated by City Council for City Engineer's Office expenses..........	250 00		
Amount appropriated by City Council for deficiency in collection of taxes...........	14,389 17		
Amount proportional salaries and office expenses...	6,666 66		
Amount received from water fund..	1,250 00		
Amount deposited on account of street permits...	8,800 00		
		331,040 83	
Total receipts.. ...			$1,836,402 29

*NOTE.—The following statement shows the amount of estimates issued during the year 1888, in the construction of new viaducts and bridges, paid (or payable) by sundry railroad companies, directly to contractors, and therefore not appearing as receipts and expenditures on the books of the Department of Public Works, the Comptroller's and Treasurer's. In this connection I would suggest the advisability of stipulating in future agreements that corporations who pay part or all of the cost of public improvements be held to make their payments to the *City* instead of to the ***contractor*** (whose contract is with the City of Chicago), so that the entire cost of the improvement may be properly and completely shown on the books mentioned.

LOCATION OF VIADUCT OR BRIDGE.	NAME OF CONTRACTOR.	NAME OF RAILROAD CO.	AMOUNT.	
Ashland avenue viaduct..........	Wm. F. Hair..................	C., St. L. & P. R. R. Co	$8,452 18	
Ashland avenue viaduct..........	Same........................	C. & N.-W. R'y Co............	3,811 00	
Ashland avenue viaduct..........	Same........................	C., M. & St. P. R'y Co.........	8,452 18	
Ashland avenue viaduct..........	A. Gottlieb & Co...............	C., St. L. & P. R. R. Co.......	5,917 80	
Ashland avenue viaduct..........	Same........................	C., M. & St. P. R'y Co.........	5,917 80	$32,550 96
Western avenue viaduct..........	M. C. & J. Duffy...............	Same.........................	$34,184 06	
Western avenue viaduct..........	Same........................	C., St. L. & P. R. R. Co	23,726 83	57,910 89
Fifth avenue approach...........	Joseph Downey................	C. & Gr. W. R. R. Co..........		3,731 21
Eighteenth street viaduct	Same........................	C. & W. Ind. R. R. Co.........	$14,314 76	
Eighteenth street viaduct	Keystone Bridge Co............	Same.........................	74,808 00	89,122 76
Twelfth street viaduct extension...	Sackley, Daley & Co............	A. T. & S. Fe R. R. Co........		23,836 25
Thirty-fifth street viaduct........	A. F. Wilson..................	C. & W. Ind. R. R. Co.		10,285 00
Wells street bridge	FitzSimons & Connell Co.......	North Chicago Street R. R. Co..	$59,000 00	
Wells street bridge	Keystone Bridge Co.	Same.........................	86,750 00	
Wells street bridge	Vulcan Iron Works.............	Same.........................	4,690 00	150,440 00
Dearborn street bridge...........	FitzSimons & Connell & Co.....	Same.........................		30,000 00
		Total......................		$397,877 07

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* See also page 40, "Receipts from railroad companies on account bridges and viaducts."

EXPENDITURES.

Acc't Improved Streets.

Paid for—

Labor.............	$126,999	93
Implements, tools and repairing....	1,173	48
Gravel............	2,148	00
Coal.......	264	69
Hardware.... .. .	235	59
Iron cart..........	62	68
Lumber...........	2,177	23
Car fare..........	247	81
Advertising.......	53	27
Stone setting......	15	69
Printing and stationery.	86	75
Sweeping and cleaning.	86,520	78
Paint and oil......	43	12
Paving............	6,371	63
Signs.........	14	40
Rubber goods.....	8	00
Lamps and lanterns	42	50
Curbing	188	00
Blocks............	2,127	36
Cement...........	141	24
Ground rent	221	96
Slag..............	274	50
Repairing rollers...	91	18
Plumbing	67	00
Screenings........	83	36
Macadam.........	647	44
Horse-shoeing	6	90
Engineer supplies.	12	38
Sprinkling.........	215	00
Carried forward,	$230,541	87

Brought forward,	$230,541 87	
Const'g sidewalk ..	37 58	
Tarred felt........	8 00	
Sand..............	15 00	
Earth filling... ...	5 25	
	$230,607 70	
Deduct amount charged "New electric light plant" for paving.	4,482 50	$226,125 20

Acc't Unimproved Streets.

Paid for—		
Labor....	$65,221 95	
Gravel............	417 43	
Tools and repairing	628 45	
Paving blocks......	1,050 00	
Lumber......	39,455 59	
Hardware.........	3,315 19	
Blacksmithing.....	91 74	
Stationery etc......	116 43	
Repairing roller....	106 11	
Ground rent.......	430 89	
Improving Kedzie ave. and W. 26th street..........	7,307 00	
Car fare....... ...	162 87	
Screenings and cinders............	277 50	
Macadam..	408 14	
Building sidewalk..	15 00	
Rebates on sidewalks..........	14 70	
Traveling expenses.	48 50	
Carried forward,	$119,067 49	$226,125 20

Brought forward,	$119,067 49	$226,125 20
Bricks	8 00	
Express charges	4 00	
		119,079 49
Acc't Dearborn Park.		
Paid for—		
Labor		42 50
Acc't Aldine Square.		
Paid for—		
Labor	$640 00	
Coal	140 00	
Glazing	10 05	
		790 05
Acc't Douglas Monument Square.		
Paid for—		
Labor	$639 01	
Lawn mower	10 73	
Hose	12 00	
Pump handle	2 10	
		663 84
Acc't Campbell Park.		
Paid for—		
Labor	$216 25	
Paint	1 85	
Plumbing	5 00	
Hose	5 00	
Repairing lawn mower	3 00	
		231 10
Acc't Union Square.		
Paid for—		
Labor	$9 34	
Grass seed	6 25	
		15 59
Carried forward,		$346,947 77

Brought forward,		$346,947 77

Acc't Ellis Park.

Paid for—

Labor.............	$663 12	
Grass seed..........	3 95	
Lawn mower.......	9 75	
Paint and oil.......	14 59	
Crushed stone......	104 30	
		795 71

Acc't Lake Park.

Paid for—

Labor.....	[illegible]	
Grass seed	[illegible]	
Paint and oil..	56 [illegible]	
Hardware	7 [illegible]	
Benches	[illegible]	
Lumber............	114 56	
Cedar posts.... ...	140 00	
Repairing lawn-mower..	13 02	
		2,601 85

Acc't Washington Square.

Paid for—

Labor.............	$1,216 58	
Grass seed.........	6 45	
Repairing fountain.	23 20	
Hardware........	2 85	
Plumbing..........	26 40	
Hose............ .	60 00	
Sprinkling.........	210 00	
		1,545 48

Carried forward,		$351,890 81

Brought forward,		$351,890 81
Acc't Public Buildings.		
OPERATING CITY HALL.		
Paid for—		
Labor	$21,236 39	
Coal	18,733 27	
Oil and grease	425 34	
Repairing tools	73 99	
Waste and packing	105 72	
Lamps	327 90	
Engineer's supplies	435 58	
Meter	67 15	
Pyrometer	30 00	
Brick	7 00	
Repairing boiler	12 50	
Repairing pump	79 60	
Electric light supplies	1,221 08	
Fire brick and clay	43 00	
Furniture	55 00	
Varnish	6 00	
Towels etc	55 15	
Machine work	37 26	
Pipe and fittings	1,434 36	
Thermometer	3 00	
Covering pipe	52 38	
Advertising	3 20	
Cement and lime	13 55	
Lumber	6 50	
Belting	148 75	
	$44,613 67	
MAINTAINING.		
Paid for—		
Labor	22,076 40	
Carried forward,	$66,690 07	$351,890 81

Brought forward,	$66,690 07	$351,890 81
Coal	4,424 67	
Iron railing and wire-work	197 00	
Advertising	19 37	
Glass	33 30	
Plumbing	83 61	
Soap, brooms and dusters	149 13	
Janitor's supplies	459 27	
Tools and hardware	222 36	
Sawdust	24 00	
Rope	11 31	
Lumber	272 28	
Carpets	510 69	
Furniture	514 06	
Repairing machinery	37 93	
Oil, paint and brushes	255 28	
Cleaning carpets	41 72	
Engineer's supplies	39 36	
Repairing boiler	51 34	
Metal plates	17 75	
Linoleum	78 81	
Soap powder	19 50	
Electric lamps	1,053 15	
Roofing	45 50	
Repairing clock	5 50	
Electric supplies	21 27	
Lettering	2 50	
Cedar posts	70 00	
Express charges	30	
Repairing flag	3 50	
Ice	112 00	
Belting	118 54	
Carried forward,	$75,585 07	$351,890 81

Brought forward,	$75,585 07	$351,890 81
Speaking tubes....	33 95	
Gas..............	12 20	
Repairing elevator.	73 40	
		75,704 62
Acc't Sidewalks—General Repairs.		
Paid for—		
Labor.............	$14,604 60	
Hardware.........	4 50	
Postage, car fare etc	235 73	
		14,844 83
Acc't Sidewalks—Intersections.		
Paid for—		
Labor.............	$14,212 12	
Sundries..........	53 66	
		14,265 78
Acc't House Moving Permits.		
Paid for—		
Salaries and labor..	$2,573 91	
Printing...........	2 00	
Rebates...........	9 00	
		2,584 91
Acc't Street Permits.		
Paid for—		
Inspection and labor	$5,959 00	
Printing and stationery....	32 00	
Overcharge rebated	8 25	
		5,999 25
Acc't West Division Pound.		
Paid for—		
Labor.............	$585 25	
Paint and oil......	38 75	
Carried forward,	$624 00	$465,290 20

Brought forward,	$ 624 00	$465,290 20
Hardware.........	33 56	
Lumber...........	865 61	
Chimney..........	8 00	
Roofing	211 50	
Iron work.........	165 18	
Sash..............	1 50	
Plumbing.........	43 84	
		1,953 19

Acc't Street Department Office Expenses.

Paid for—

Car fare...........	$360 57	
Postage...........	330 77	
Lettering	1 50	
Books, printing and stationery.......	145 24	
Wire work........	40 00	
One directory......	5 00	
Rubber stamps	3 50	
Chair.............	6 75	
Steel tapes........	7 00	
		900 33

Acc't Fullerton Ave. Conduit.

OPERATING EXPENSES.

Paid for—

Salaries and labor..	$8,763 38	
Coal	5,555 60	
Fuel oil..........	4,645 64*	
Paint, oil and grease	410 92	
Packing......... ..	78 43	
Brooms, pails etc...	3 00	
Engineer supplies..	12 90	
Lamps, globes etc..	31 35	
Carried forward,	$19,501 22	$468,143 72

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*Incl. of $3,250.00 chargeable to 1887.

Brought forward,	$19,501 22	$468,143 72
Soap and soap powder	9 63	
Fire brick and clay	55 05	
	$19,565 90	

OTHER EXPENSES.

Paid for—

Teaming	8 82	
Repairing machinery	799 39	
Pipe and fittings	141 62	
Hardware	98 31	
Indicator	195 00	
Lumber	84 77	
Stone and pipe	9 33	
Pipe covering	31 15	
Wire guards	12 48	
Advertising	2 00	
Diver's services	78 00	
Bolts and washers	32 12	
Manure	4 00	
		21,062 89

Acc't Canal Pumping Works.

OPERATING EXPENSES.

Paid for—

Salaries and labor	$16,858 46	
Coal	21,323 36	
Engineer's supplies.	66 26	
Oil and grease	632 61	
Rubber goods	103 20	
Fire-brick and clay.	53 85	
Lamps, globes etc.	5 54	
Gaskets and packing	107 00	
Carried forward,	$39,150 28	$489,206 61

Brought forward,	$39,150 28	$489,206 61
Brooms and pails	10 50	
Machine work	8 85	
Lime	1 40	
Waste	40 72	
Repairing brick-work	60 35	
Flue-scraper	7 41	
Oil cups	16 00	
Matches	1 30	
Express charges	2 05	
	$39,298 86	

OTHER EXPENSES.

Paid for—

Teaming	17 43	
Repairing mach'ry	1,175 67	
Pipe and fittings	92 44	
Castings	95 06	
Advertising	2 00	
Lumber	258 54	
Hardware	20 93	
Blacksmithing	62 19	
Glass and putty	9 54	
		41,032 66

Acc't Madison Street Bridge Machinery.

Paid for—

Labor	$ 429 24	
Machinery	2,400 00	
Mill work	79 15	
Hardware	4 91	
Paint and oil	17 73	
Lumber	203 14	
Carried forward,	$3,134 17	$530,239 27

Brought forward,	$3,134 17	$530,239 27
Roofing.	55 70	
Blue prints........	1 00	
Iron stairway......	61 00	
Pipe and fittings...	3 58	
Plumbing..........	64 02	
		3,319 47

Acc't Randolph Street Bridge Machinery.

Paid for—

Labor....	$ 546 35	
Machinery.........	2,400 00	
Planing mill work..	79 15	
Hardware.........	75	
Paint and oil......	17 99	
Lumber.	152 47	
Roofing...........	55 70	
Blue prints........	1 01	
Iron stairway......	61 00	
Pipe fittings.......	3 57	
Plumbing	78 95	
New gear circle..	407 85	
		3,804 79

Acc't Repairs of Bridges and Viaducts.

Paid for—

Labor	$54,850 74	
Coal.......	5,633 95	
Machine and iron work.	7,874 15	
Chain.............	553 32	
Lumber...........	25,557 91	
Electric lights and fittings	103 95	
Carried forward,	$94,574 02	$537,363 53

Brought forward,	$94,574 02	$537,363 53
Bridge and engineer supplies..........	1,006 68	
Lamps, oil etc.....	143 45	
Hardware.........	1,259 26	
Paint, oil and grease.	1,892 22	
Piles and pile driving.............	7,949 54	
Bolts and washers.	402 53	
Paving............	5,183 97	
Cement and lime..	28 70	
Salt...............	4 00	
Bridge wheels.....	273 68	
Furniture.........	17 50	
Tanbark	1 50	
Teaming..........	58 76	
Horse keeping and shoeing.........	112 80	
Soap....	3 25	
Repairing scow....	478 20	
Bridge bells.......	97 82	
Blacksmithing.....	480 68	
Clocks and repairing.............	29 00	
Plumbing.........	166 05	
Tug service.......	87 00	
Tools and repairing.	15 20	
Waste and packing.	11 43	
Pig lead	14 25	
Stove and pipe	14 45	
Drawing material..	2 09	
Iron stairways.....	210 50	
Masonry..........	168 82	
Roofing...........	32 06	
Carried forward,	$114,719 41	$537,363 53

Brought forward,	$114,719 41	$537,363 53
Car fare	14 31	
Express charges	5 76	
Sand	6 50	
Building dock	336 20	
Freight	5 06	
Printing and advertising	33 08	
Sidewalks	19 68	
Rollers	20 00	
Glass and putty	6 70	
Stone	93 40	
Mill work	38 65	
Valve	3 00	
Damages	314 00	
Sprinkling	40 00	
Tin work	473 85	
	$116,129 60	
Deduct amount received from railroads	422 70	
		115,706 90

Acc't Jackson Street Viaduct.

Paid for—

Labor	$ 4,139 32	
Masonry and substructure	134,730 92	
Printing	21 75	
Plumbing	39 20	
Inspection	673 06	
Tarred felt	4 80	
Lumber	3,302 05	
Brick work	236 08	
Carried forward,	$143,147 18	$653,070 43

Brought forward,	$143,147 18	$653,070 43
Nails and spikes ..	316 51	
Iron work	165 37	
Tarred felting for sidewalks........	242 03	
Macadam	484 49	
Carpenter work....	26 95	
Hardware.........	5 30	
Resetting fence...	885 01	
Masonry.........	14,755 41	
Roofing..........	[illegible] 00	
Iron ladder........	[illegible] 00	
Car fare...........	[illegible]	
Sewerage work....	[illegible]	
Moving water pipes	[illegible]	
Blacksmithing.....	[illegible]	
Raising build [illegible]	[illegible] 00	
		162,687 76

Acc't Western A [illegible] *zie Street Viaduct.*

Paid for—

Labor	$4,316 49	
Printing specifications	10 00	
Blue prints........	30 90	
Advertising.......	24 53	
Teaming..........	181 25	
Plumbing.........	419 69	
Car fare...........	16 20	
Engineering, draughting etc...	520 65	
Lumber..........	55 03	
Hardware....... .	2 25	
Stairs and platform.	225 00	
		5,801 99
Carried forward,		$821,560 18

Brought forward,		$821,560 18

Acc't Ashland Avenue and Kinzie Street Viaduct.

Paid for—

Labor	$ 3,983 70	
Substructure	23,723 71	
Teaming	4 46	
Engineering, draughting etc.	827 54	
Lumber	196 74	
Hardware	10 20	
Iron work	157 74	
Plumbing	13 90	
Superstructure	8,656 20	
		37,574 19

Acc't Fifth Avenue Approach to Twelfth Street Viaduct.

Paid for—

Labor	$ 530 75	
Substructure	10,820 70	
Engineering, draughting etc.	170 35	
Superstructure	40,950 00	
Inspection	346 90	
Iron work	84 00	
Car fare	4 85	
		52,907 55

Acc't Twelfth Street Viaduct.

Paid for—

Labor	$ 68 75	
On account superstructure	585 50	
Printing	21 00	
Carried forward,	$675 25	$912,041 92

Brought forward,	$ 675 25	$912,041 92
To C., R. I. & P. R'y Co.	20,000 00	
		20,675 25
Acc't Eighteenth Street Viaduct.		
Paid for—		
Labor	$ 6 25	
Inspecting	45 50	
Substructure	4,280 18	
Superstructure	5,414 00	
Boiler-work	96 00	
		9,841 93
Acc't Indiana Street Viaduct.		
Paid for—		
Labor	$ 644 00	
Superstructure	28,991 39	
Inspection	715 47	
Lumber	11 55	
Bolts and washers	72 48	
		30,434 89
Acc't May and Kinzie Street Viaduct.		
Paid for—		
Engineering, draughting, printing etc.		69 65
Acc't Dearborn Street Viaduct.		
Paid for—		
Labor	$1,868 50	
Masonry	5,094 81	
Engineering, draughting etc.	64 52	
Blue prints	38 71	
Carried forward,	$7,066 54	$973,063 64

Brought forward,	$7,066 54	$973,063 64
Teaming..........	2 98	
Raising buildings...	20 00	
Advertising.......	18 50	
Inspecting.........	80 50	
Express charges..	70	
Iron beams........	497 90	
Stone.............	247 62	
		7,934 74
Acc't Twelfth Street Viaduct Extension.		
Paid for—		
Labor.	$454 07	
Engineering, draughting etc ..	96 79	
Blue prints	11 77	
		562 63
Acc't Thirty-Fifth Street Viaduct.		
Paid for—		
Labor.............	$ 684 37	
Engineering and draughting......	372 01	
Substructure.......	23,367 52	
Blue prints........	25 13	
Teaming..........	1 49	
Advertising	12 69	
		24,463 21
Acc't Raising Buildings at Twelfth Street Viaduct.		
Paid for changing location of sewers on east side of Clark, north of Twelfth street...		420 62
Carried forward,		$1,006,444 84

Brought forward,		$1,006,444 84

Acc't Eighteenth Street Bridge.

Paid for—

Labor	$1,359 54	
Inspecting	306 90	
Substructure	9,406 50	
Superstructure	21,500 00	
Cutting stone	25 00	
Earth filling	177 18	
Testing iron	12 71	
Bell	25 20	
Machine and iron work	1,686 32	
Stone	15 00	
Sand	4 00	
Cement	6 35	
Carpenter work	33 00	
Lumber	72 45	
Chain	16 92	
Sash	3 00	
Railing	62 30	
Blacksmithing	53 87	
		34,766 24

Acc't Jackson Street Bridge.

Paid for—

Labor	$2,284 84	
Superstructure	76,500 00	
Traveling expenses	25 00	
Machinery	4,613 22	
Blue prints	1 81	
Inspecting iron	751 97	
Cement	19 50	
Spikes	16 80	
Signs	6 00	
Carried forward,	$84,219 14	$1,041,211 08

Brought forward,	$84,219 14	$1,041,211 08
Sand	2 70	
Bridge bell	28 00	
Lumber	52 28	
Plumbing	131 06	
Pipe and fittings	298 27	
Hardware	21 20	
Freight	5 20	
Changing stairway	165 00	
Iron work	104 00	
Bridge house	217 20	
		85,244 05

Acc't Dearborn Street Bridge—South Approach.

Paid for—

Blue prints	$ 2 34	
Labor	1,554 20	
		1,556 54

Acc't Deering Street Bridge.

Paid for—

Advertising	$ 18 78	
Blue prints	8 05	
Labor	555 00	
		581 83

Acc't Wells Street Bridge.

Paid for—

Labor	$137 50	
Engineering, drau't-ing and advertising	646 80	
		784 30
Carried forward,		$1,129,377 80

Brought forward,		$1,129,377 80
Acc't Adams Street Bridge.		
Paid for—		
Engineering, drau't-ing and labor....		1,183 01
Acc't Clark Street Bridge.		
Paid for—		
Blue prints........		24 61
Acc't River Electric Light Plant.		
OPERATING EXPENSES.		
Paid for—		
Salaries and labor..	$4,184 44	
Coal..............	3,507 81	
Oil	435 75	
Waste, soap etc....	33 41	
Cement and lime ..	15 00	
Sand.............	6 00	
Steam blower......	40 00	
Plumber's furnaces.	28 40	
Blacksmithing.....	18 50	
Car fare...........	16 00	
Rope.............	11 01	
Lamps............	1 50	
Steel stripper......	4 50	
	$8,302 32	
OTHER EXPENSES.		
Lumber	128 31	
Hardware.........	20 72	
Iron work.........	275 26	
Machine supplies..	108 99	
Carried forward,	$8,835 60	$1,130,585 42

Brought forward,	$8,835 60	$1,130,585 42
Plumbing	157 33	
Pipe fitting	402 26	
Lead pipe	22 24	
Electric supplies	1,655 13	
Repairing cables	469 68	
Paint, oil and brushes	80 95	
Step-ladder	20 70	
		11,643 89

Acc't Jefferson Street Electric Light Plant.

CONSTRUCTION.

Paid for—		
Labor	$8,142 99	
Car fare	50 00	
Teaming	88 46	
Lumber	456 48	
Hardware	42 23	
Crushed stone	60 75	
Surveying lot	10 00	
Paving	6,020 48	
Man-holes	3,202 47	
Plumbing	167 20	
Brick	1,540 50	
Sand	262 50	
Lime and cement	429 60	
Cut stone	601 13	
Boilers, mud drums etc	4,236 80	
Fire brick and clay	431 30	
Gaskets and valves	7 66	
Blue prints	2 62	
Carried forward,	$25,753 17	$1,142,229 31

Brought forward,	$25,753 17	$1,142,229 31
Lamp posts	2,412 88	
Shafting, pulleys and iron work...	2,831 24	
Pipe fittings...... ..	3,167 85	
Galvanized iron work...........	115 19	
Machinery	3,485 40	
Tools...............	10 36	
Lubricators	72 50	
Stairs, sash and glazing	98 73	
Roofing...........	200 90	
Steam pumps	487 00	
Steam pipe covering.............	103 50	
Electric wire supplies............	10,974 63	
Steam-gauges and valves...........	184 50	
Clock............ .	65 00	
Painting and calcimining.........	146 75	
Belting and rubber goods...........	804 47	
Coping stone......	174 80	
Iron castings..	2,473 90	
Engineer's board...	20 00	
Paint and brushes..	13 26	
Electric wire......	7,505 16	
Iron pipe..........	225 79	
Constructing conduit.............	2,965 02	
Dynamos and lamps	21,216 20	
	$85,508 20	
Carried forward,		$1,142,229 31

Brought forward,		$1,142,229 31

OPERATING.

Salaries and labor..	$613 75	
Slabs........... ...	6 00	
Oil and waste.. ...	102 64	
Packing...........	23 25	
		86,253 84

Acc't Chicago Harbor.

Paid for—

Labor.............	$12,129 29	
Dredging..........	36,947 41	
Car fare...........	41 96	
Tug service........	103 40	
Advertising...	6 07	
Iron float..........	7 06	
Paint and oil.......	2 27	
Hardware	16 25	
Books and printing.	8 00	
Row-boat.........	40 00	
Surveying instrument............	12 25	
Cot and bedding...	27 10	
Lumber........ ...	127 50	
Traveling expenses.	70 00	
		49,538 56

Acc't Ogden Ditch Dam.

Paid for—

Labor.............	$509 83	
Teaming.........	23 46	
Engineer's supplies.	1 15	
Lumber..........	2 99	
Centals and twine..	41 76	
		579 19
Carried forward,		$1,278,600 90

Brought forward,		$1,278,600 90

Acc't Washington Street Tunnel.

Paid for—

Engineer's salary and labor	$519 79	
Coal	42 83	
Engineer supplies	1 75	
Electric lamps	191 25	
Hardware	35	
		755 97

Acc't La Salle Street Tunnel.

Paid for—

Engineer's salary and labor	$432 00	
Lumber	4 48	
Wire guards	45 95	
Repairing pipes	9 99	
Whitewashing	115 00	
Salt	95	
Paint and oil	35 71	
Hardware	3 00	
Electric lamps	21 25	
		668 33

Acc't Special Assessments.

Paid for—

Advertising	$13,541 12	
Expert testimony.	2,547 44	
Postage	1,000 71	
Labor	6,762 55	
Books, printing and stationery	776 75	
Legal expense (fees etc.)	6,869 00	
Carried forward,	$31,497 57	$1,280,025 20

Brought forward,	$31,497 57	$1,280,025 20
Stenographing	61 00	
Furniture	17 83	
Making assessments	8,059 00	
Car fare	268 74	
Inspecting	90 00	
Repairing hektograph.	5 00	
Map of Chicago	20 00	
City directory	5 00	
Livery	48 00	
Collecting special assessments	23,737 99	
Tin boxes	30 00	
		63,840 13
Acc't Street Lamps.		
Paid for—		
Labor	$5,615 87	
Advertising	28 34	
Lamps and fixtures,	2,463 47	
Charcoal	40 00	
Coke	18 00	
Street signs	1,420 78	
Lamp posts	2,971 05	
Solder	277 50	
Photometer	325 00	
Coal	27 00	
Hardware	781 65	
Repairing lamps	237 00	
Pressure gauge	8 50	
Maps	9 00	
Shop and barn rent.	545 25	
Tools and repairing.	66 55	
Carried forward,	$14,834 96	$1,343,865 33

Brought forward,	$14,834 96	$1,343,865 33
Glass, oil etc ……	3,330 67	
Tin and tinner's supplies………	297 48	
Repairing wagons..	149 50	
Horse-keeping…..	276 11	
Candles………..	7 50	
Horseshoeing and blacksmithing…	22 10	
Paint and oil……	191 84	
Plumbing…… …	21 66	
Gas……………	74 40	
Repairing harness..	10 75	
		19,216 97
Acc't Public Benefits.		
Paid for—		
City's portion of streets improved.		400,934 10
Acc't Salaries.		
Paid employes of—		
Street department.	$35,751 37	
City Engineer's department……..	9,928 15	
Special assessment department……	24,929 60	
Map department….	10,715 99	
One-third salaries of Commissioner, secretary, bookkeeper and others.	6,199 99	
Bridge tenders…..	60,688 71	
		148,213 81
Carried forward,		$1,912,230 21

Brought forward,		$1,912,230 21
Acc't Proportional Office Expenses.		
Paid for—		
Books, printing and stationery	$542 93	
One-third annual report...........	514 85	
Lithographing.....	111 67	
Binding and lettering reports......	144 50	
Postage...........	113 48	
Car fare.	12 55	
Express charges...	1 00	
Binding contracts etc.............	31 50	
Newspapers.......	14 31	
		1,486 79
Acc't City Engineer's Office Expenses.		
Paid for—		
Printing and stationery..........	$ 19 25	
Car fare...........	124 74	
Locksmithing	35	
Express charges...	85	
Postage	2 75	
Drawing material..	44 27	
Advertising	41 92	
Telegrams	2 68	
		236 81
Acc't Map Office Expenses.		
Paid for—		
Drawing material..	$ 375 05	
Carried forward,	$375 05	$1,913,953 81

Brought forward,	$375 05	$1,913,953 81	
Printing and stationery	20 40		
Mounting and binding maps	106 50		
Postage	50		
City directory	5 00		
		507 45	
Total expenditures.			$1,914,461 26

CITY HALL FUND.

RECEIPTS.

Amount appropriated by City Council	$10,200 00	
Amount received from Public Library fund	4,019 28	
Amount received from Police fund.	9,184 00	
Total receipts		$23,403 28

EXPENDITURES.

Acc't Rotunda.

Paid for—

Advertising	$ 21 74
Masonry	615 00
Iron work	2,660 70
Carpenter work	9,730 60
Sewerage	285 00
Plumbing and gas-fitting	643 00
Carried forward,	$13,956 04

Brought forward,	$13,956 04		
Fire-proofing	1,746 69		
Plastering	1,396 00		
Tile and marble work	2,997 75		
Galvanized iron work	175 00		
Steam-fitting	424 00		
Vault door	187 50		
Repairing roof	20 50		
Covering pipes	35 00		
Labor	146 00		
		$21,084 48	

Acc't Public Library.

Paid for—			
Advertising	$ 6 88		
Carpenter work	2,658 50		
Frescoing	500 00		
Plumbing	21 00		
Electric light connections	647 61		
Gas fixtures	122 00		
Steam-fitting	63 29		
		4,019 28	

MISCELLANEOUS EXPENDITURES.

Paid for—			
Desks and chairs for Council chamber	$798 00		
Mat. Taylor, on account of granolithic sidewalks	576 00		
		1,374 00	
Total expenditures,			$26,477 76

TRIAL BALANCE.

LEDGER, DEPARTMENT OF PUBLIC WORKS, CHICAGO.
DEC. 31, 1888.

	Dr.	*Cr.*
Water Fund	$ 386,603 15	
Water Works	12,390,463 95	
Water Works income		$21,384,508 55
Water Fund, general taxes,		2,713,878 53
Water-loan bonds, 6 per cent		132,000 00
Water-loan bonds, 7 per cent		3,340,000 00
Water-loan bonds, 4 per cent		150,000 00
Water-loan bonds, 3$\frac{65}{100}$ per cent		333,000 00
Water-loan bonds canceled		859,000 00
Water-loan interest	6,454,694 75	
Water Works expense and repair account	8,569,751 06	
Refunding loan account...	875,280 00	
American Exchange National Bank, N. Y......	125,734 03	
F. C. Meyer, book-keeper.	300 00	
R. N. Pearson, cashier ...	691 88	
Meter department, stock account	12,414 57	
Water works shop, stock account	10,111 50	
Tapping department, stock account	6,641 48	
Water pipe and special castings...............	120,000 00	
Sewer pipe account	291 02	
Carried forward,	$28,952,977 39	$28,912,387 08

Brought forward,	$28,952,977 39	$28,912,387 08
Lead account............		2,294 08
Ogden, Sheldon & Co		28 25
Barrett, Todd & Cochran.		250 00
John Tyrrell.............		150 00
West Chicago Park Commissioners.............		1,130 57
S. H. Wheeler		250 32
C. J. L. Meyer...		200 00
Wm. D. Kerfoot & Co....		4,524 37
Julia F. Porter...........		185 90
Chicago Canal & Dock Co.		1,166 43
Adele F. Adams		638 10
Clara F. Bass............		1,195 80
Board of Education......		800 00
J. Q. Adams.....		124 69
Conrad Seipp............		431 00
J. J. Mitchell		399 40
E. A. Cummings & Co....		2,154 13
Baird & Bradley.........		1,029 48
Little Sisters of the Poor..		500 00
J. U. Borden.............		1,179 28
C. & Gr. W. R'y Co.......		882 00
Edson Keith		3,177 61
C. L. Bonney............		589 70
W. F. Myrick............		725 51
Jacobson & Tallman......		563 56
Lamson Bros......... ...		682 83
Walker & Armour		2,636 44
F. H. Watriss............		2,746 62
Estate C. H. McCormick..		60 00
W. M. Tuttle, trustee		600 00
Thos. J. Divan...........		1,250 00
S. E. Gross..............		2,146 85
J. Stiles.................		3,161 60
Carried forward,	$28,952,977 39	$28,950,241 60

Brought forward,	$28,952,977 39	$28,950,241 60
F. J. LeMoyne		179 37
J. K. Cochran		646 42
Geo. A. Fuller		625 00
K. T. Triplett		275 00
Hydrant wrenches		1,010 00
Sewerage fund	38,208 54	
Sewers, North Division	1,246,864 81	
Sewers, South Division	1,897,907 90	
Sewers, West Division	4,029,719 31	
Sewer pipe account	2,780 34	
Sewer brick account	318 50	
Wooden covers account	6,160 00	
Iron covers account	5,162 45	
Cement account	185 00	
Sand account	110 00	
Sewer loan bonds, 4 per cent		845,000 00
Sewer loan bonds, 7 per cent		1,288,000 00
Sewer loan bonds, 4½ per cent		489,500 00
Sewer loan bonds canceled		377,500 00
Sewer fund, general taxes.		4,349,066 57
General fund	382 55	
Sewer fund, suspended account	111,548 77	
Galena & Chicago Union R. R. Co		382 55
Wm. Dreiske		2,227 57
L. M. Malaney		400 00
Thos. D. Lowther		250 00
H. H. Walker		450 00
Roxana A. Wentworth		500 00
Carried forward,	$36,292,325 56	$36,306,254 08

Brought forward,	$36,292,325 56	$36,306,254 08
Mrs. Mary White........		200 00
Walter Lester...........		172 40
Heywood & Merrill Rattan Co................		1,525 00
Jas. FitzSimons..........		300 00
Thos. J. Divan...........		300 00
Chicago Malleable Iron Co.		900 00
Board of Education......		4,677 50
E. F. Lawrence..........		586 00
John W. Garvey....		170 00
Estate of Thomas Suffren.		2,650 00
Geo. A. Seaverns........		75 00
Presbyterian Theological Seminary..............		1,397 50
Paul Schulte.............		120 00
J. B. Maypole............		110 00
Vopicka & Kubin.... ...		382 00
Baird & Bradley.........		3,060 00
H. R. Durkee		525 00
Chicago Gas Light & Coke Co....................		330 00
L. C. Ward..............		285 00
Mrs. G. M. Richardson...		152 00
Mrs. M. A. Richardson...		162 00
Wm. Waller.............		285 00
Wm. M. Dee.............		562 40
E. Pardridge.............		790 00
Ernst H. Niedert.........		100 00
J. L. Lombard...........		580 00
Estate of C. H. McCormick		950 00
Laz. Silverman		343 70
Morrisson, Plummer & Co.		225 00
E. W. Morrison..........		500 00
Leopold Mayer..........		500 00
Carried forward,	$36,292,325 56	$36,329,169 58

Brought forward,	$36,292,325 56	$36,329,169 58
John G. Shortall..........		500 00
C. R. and A. B. Dewey...		500 00
Theo. Lattan............		100 00
Geo. L. Dunlap..........		500 00
Jos. Downey.		200 00
L. Schoenbrunn		62 50
L. Morgenthau..........		62 50
J. J. Williams		100 00
E. W. Ackerstrom......		100 00
C. C. Collins.............		500 00
W. A. Fuller............		200 00
Chas. Aug. Woerner.....		100 00
James Arthur............		125 00
Wm. M. Dee & Son......		261 00
W. J. Anderson..........		500 00
C. W. Pardridge.........		220 50
Sewer maintenance account..................	40,875 52	
Appropriation fund......	208,252 58	
Public benefits...........		492 21
Special assessments......		747 00
Street lamps		519 20
Chicago harbor..........		7,633 06
Canal pumping works....		2,434 75
Twelfth street viaduct....		665 50
Chicago avenue viaduct...		100 00
Twelfth street viaduct—raising buildings.......		12,179 38
Carpenter street bridge...		4,200 00
Blackhawk street bridge..		8,300 00
Fourteenth street bridge..		75,548 15
Oak street bridge........		8,300 00
Dearborn street bridge, south approach........		28,443 46
Carried forward,	$36,541,453 66	$36,482,763 79

Brought forward,	$36,541,453 66	$36,482,763 79
Surplus account.........		12,891 54
Canal street bridge.......		1,000 00
Deering street bridge....		14,418 17
Webster avenue bridge...		8,300 00
Western (N.) avenue bridge................		10,000 00
Street Department—stock account...............	5,982 32	
Deposits for permits......		7,193 16
Public buildings..........		386 88
Dearborn street viaduct..		12,065 26
Thirty-fifth street viaduct.	1,095 69	
Twelfth street viaduct extension................	562 63	
Improved streets		75 50
City Hall fund...........	1,729 59	
City Hall appropriation...		1,706,197 05
Board of Education......		10,970 24
New City Hall...........	1,715,437 70	
	$38,266,261 59	$38,266,261 59

Respectfully submitted.

F. C. MEYER,

Book-keeper.

H.G.

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